

CARRY FOUNTAIN PUMPS

SINGLE and THREE PHASE OWNERS MANUAL



CARRY MANUFACTURING, INC.
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CARRY MANUFACTURING, INC.
SINGLE AND THREE PHASE FOUNTAIN PUMP OWNERS MANUAL

ATTENTION!

**IMPORTANT INFORMATION FOR
INSTALLERS OF THIS EQUIPMENT!**

THIS EQUIPMENT IS INTENDED FOR INSTALLATION BY TECHNICALLY QUALIFIED PERSONNEL. FAILURE TO INSTALL IT IN COMPLIANCE WITH NATIONAL AND LOCAL ELECTRICAL CODES AND WITH CARRY MANUFACTURING RECOMMENDATIONS MAY RESULT IN **ELECTRICAL SHOCK OR FIRE HAZARD**, UNSATISFACTORY PERFORMANCE, AND EQUIPMENT FAILURE. ADDITIONAL INSTALLATION INFORMATION IS AVAILABLE FROM CARRY MANUFACTURING. CALL TOLL FREE 800-49-2779.

WARNING!

SERIOUS OR FATAL ELECTRICAL SHOCK MAY RESULT FROM FAILURE TO CONNECT THE MOTOR, CONTROL ENCLOSURES, METAL PLUMBING, AND ALL OTHER METAL NEAR THE MOTOR OR CABLE, TO THE POWER SUPPLY GROUND TERMINAL USING WIRE NO SMALLER THAN THE MOTOR CABLE WIRES. TO REDUCE THE RISK OF ELECTRICAL SHOCK, DISCONNECT POWER BEFORE WORKING ON OR AROUND ALL ELECTRICAL COMPONENTS. **DO NOT** USE MOTOR IN SWIMMING AREAS.



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Complete the Warranty & Registration Card today to ensure that your pump's warranty is activated!

CARRY MANUFACTURING, INC.
SINGLE AND THREE PHASE FOUNTAIN PUMP OWNERS MANUAL

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CARRY MANUFACTURING, INC.
SINGLE AND THREE PHASE FOUNTAIN PUMP OWNERS MANUAL
STANDARD WARRANTY AND CONDITIONS OF SALE

PRELIMINARY INFORMATION: Any preliminary drawings and illustrative materials used in the specification build-up process show general arrangement and approximate dimensions only. Certified drawings will be submitted after receipt of an order, if required.

PRICES: Any listed price is subject to change without notice. Orders are accepted with the understanding that the product will be billed at the price in effect at the time of shipment, unless otherwise specified by Carry Manufacturing, Inc.

QUOTATIONS: Any quotation 60 days old is subject to change without notice. The price of each order is subject to the resource availability and costs incurred by Carry Manufacturing, Inc. at the time of manufacture.

FREIGHT: F.O.B. Carry's factory in Caro, Michigan. Catalog weights are careful estimates, but they are not guaranteed. No allowance will be made for cartage at destination.

TAXES AND OTHER CHARGES: The prices do not include any Federal, State or Local sales, use or other taxes, or brokerage fees that may be applicable. The amount of any such applicable taxes or fees will be added to the invoice at the rate in effect at the time of shipment.

ACCEPTANCE: No order shall be binding upon Carry Manufacturing, Inc. until accepted in writing by an authorized official at its home office in Caro, Michigan. Any contract for the sale of product and these Conditions of Sale, shall be governed by and construed according to the Uniform Commercial Code as adopted in the State of Michigan.

If the product quoted is not approved by the Consulting Engineer, Carry Manufacturing, Inc. assumes no responsibility to furnish any item manufactured by others.

CREDIT: Credit worthiness of a Purchaser will be determined upon receipt of the contract. Credit terms, if authorized, are subject to change during the life of the contract if the financial condition of the Purchaser changes.

CANCELLATION: Cancellation of orders will be accepted with the understanding that Carry Manufacturing, Inc. will be entitled to reimbursement for expenses incurred at the time of cancellation, including any and all special engineering, design, tooling, manufacturing, storage or transportation costs.

TERMS, PAYMENT & INVOICING: Standard payment terms are NET 30 days from the date of the invoice. Retaining a percentage of the contract sale amount is prohibited without prior, written agreement. Payment must be made in U.S. Funds. An invoice will be rendered as of the date the product is ready for shipment. A service fee of 1-1/2% per month on all invoices over 30 days past due will be imposed. In the event of any default by the Purchaser, Carry Manufacturing, Inc. shall have the right to repossess the product as well as all other rights afforded to a conditional seller under the provisions of the Uniform Conditional Sales Act and any other applicable laws.

CARRY MANUFACTURING, INC.
SINGLE AND THREE PHASE FOUNTAIN PUMP OWNERS MANUAL
STANDARD WARRANTY AND CONDITIONS OF SALE

MANUALS: One (1) owner's/service manual will be provided with each purchase of a single pump. Additional owner's/service manuals are available for \$15.00 each.

DELIVERY: The estimated shipping date is based on the production time required to process the order commencing with the date the order is accepted by Carry Manufacturing, Inc. In the event it is necessary to revise the design, specifications, or Conditions of Sale, the shipping date shall be automatically extended by the period of time required to achieve the mutually agreed upon correction or adjustments of the design, specifications or Conditions of Sale.

Carry Manufacturing, Inc. reserves the right to make shipment of completed segments of an order and pro rate the invoice for those segments as shipments are made.

DELAYS IN DELIVERY: Carry Manufacturing, Inc. shall not be responsible for any delay or for any damages suffered by the Purchaser by reason of any delay due to fires, strikes, riots, Acts of God, priorities, Government orders or restriction, delays in transportation, delays of suppliers of materials or parts, inability to obtain necessary labor, or other causes beyond the control of Carry Manufacturing, Inc. In the event of such a delay, the shipping date shall be extended for a period of time equal to the time lost by reason of such a delay.

Any product held more than three (3) weeks after the estimated shipping date at the Purchaser's request will be stored at the Purchaser's expense unless otherwise agreed upon.

DAMAGE OR LOSS IN TRANSIT: Delivery of the product to a carrier at Carry Manufacturing's plant or other shipping point selected by Carry Manufacturing shall constitute delivery to the Purchaser. Regardless of freight payment, all risk, loss or damage in transit shall pass to the Purchaser at that time. The Purchaser shall make claims for loss or damage to product while in transit, against the carrier and not against Carry Manufacturing, Inc. Carry Manufacturing, Inc. will assist the Purchaser in securing satisfactory adjustment of such claims.

BETWEEN SHIPMENT AND PAYMENT: The Purchaser shall be responsible for the care, maintenance and protection of the material or product after delivery. The Purchaser agrees to provide and maintain adequate insurance for the product or materials shipped to the Purchaser against loss or damage by fire, explosion or other causes during the time between shipment and final payment in an amount fully protecting Carry Manufacturing, Inc.

The title and right of possession to the machinery shall remain with Carry Manufacturing, Inc. and the machinery shall remain personal property irrespective of attachment to, or location on, any foundation or in any structure, until all payments shall have been made in cash. The Purchaser will do all acts necessary to protect the above title and right.

INSTALLATION: Unless specifically stated otherwise, all material or product shall be installed and placed in service by, at the expense of, and under the exclusive responsibility of the Purchaser.

CARRY MANUFACTURING, INC.
SINGLE AND THREE PHASE FOUNTAIN PUMP OWNERS MANUAL
STANDARD WARRANTY AND CONDITIONS OF SALE

RETURNED PRODUCT: Authorization and shipping instructions for the return of any product must first be obtained by the Purchaser from Carry. Otherwise shipment will be refused. Only unused standard product or materials of current design by Carry will be considered for return. Custom products cannot be returned for credit. If the returned product is in sellable condition, a credit memorandum will be issued minus a **minimum restocking charge of 15%** and minus all transportation charges paid by Carry.

PUMP WARRANTY REGISTRATION CARD AND PROOF OF PURCHASE: Within 30 days of the purchase of the pump, Purchaser shall mail to Carry by certified mail, return receipt requested, the pump warranty registration card accompanied by proof of purchase from the retail seller indicating the date and purchase price of the pump at issue. This warranty is void unless the warranty registration card and proof of purchase are provided to Carry as set out above and are on file with Carry.

LIMITED WARRANTY: Carry warrants the product sold by it to be free from defects in materials and workmanship for a period of one (1) year from the date of purchase of the pump as verified by the product warranty registration card and proof of purchase provided to Carry by Purchaser.

WARRANTY DISCLAIMER: This warranty does not apply to the product if used in an aquacultural application or to pumps that have been subject to mis-use (including use in a manner inconsistent with the design of the pump), abuse, neglect, accident or improper installation or maintenance, or to pumps that have been altered or repaired by anyone other than Carry. The warranties in this agreement are in lieu of all other warranties, express or implied, including without limitation, any warranties of merchantability or fitness for a particular purpose, said warranties being expressly disclaimed.

WARRANTY AMENDMENTS: Prior or subsequent courses of dealing, trade usage and verbal agreements not reduced to a writing signed by Carry, to the extent they differ from, modify, add to or detract from this warranty shall not be binding upon Carry. There are no agreements, promises or understandings, either verbal or written, that are not fully expressed in this warranty. No statements, recommendations or assistance by either party have been relied upon by either party nor shall they be relied upon and shall not constitute a waiver by either party of any of the provisions hereof. This warranty may be amended or altered only if agreed to in writing signed by Carry.

LIMITED REMEDY: Carry and Purchaser agree the repair or replacement of the pump at issue is a commercially reasonable allocation of risk and, therefore, Purchaser agrees that its sole and exclusive remedy against Carry shall be limited to the repair or replacement of the pump at issue. This exclusive remedy shall not be deemed to have failed of its essential purpose so long as Carry is willing and able to repair or replace the pump at issue. In the event Carry is unable to repair or replace the pump at issue in a manner acceptable to Purchaser, or in the event it shall be determined by a court having jurisdiction thereof that any provisions of this warranty are unconscionable or fail in its essential purpose, then the maximum liability of Carry shall be that as set forth in the paragraph next following entitled "Limitation on Liability."

CARRY MANUFACTURING, INC.
SINGLE AND THREE PHASE FOUNTAIN PUMP OWNERS MANUAL
STANDARD WARRANTY AND CONDITIONS OF SALE

LIMITATION ON LIABILITY: Carry shall not be liable for any loss, damage or injury resulting from delay in delivery or installation of the pump or for any failure to perform which is due to circumstances beyond its control. Carry and Purchaser agree it is a commercially reasonable allocation of risk that the maximum liability, if any, of Carry for all damages, including without limitation contract damages and damages for injuries to persons or property, whether arising from Carry's breach of this agreement, breach of warranty, negligence, strict liability or other tort, is limited to an amount not to exceed the purchase price of the pump at issue in the dispute and said liability is so limited. In no event shall Carry be liable to Purchaser for any incidental, consequential or special damages, including without limitation, lost revenues and profits, even if it has been advised of the possibility of such damages.

WARRANTY CLAIM PROCEDURE: The warranty is valid only if the following conditions are complied with by the Purchaser. Purchaser shall notify Carry in writing of the defect in the pump at issue within 30 days of discovery of the defect. The notice shall include with it copies of the warranty card, proof of purchase and the return receipt signed by a representative of Carry as provided above. In the event repair or replacement of the pump at issue is approved by Carry, Purchaser shall, upon written notice by Carry of the approval, return the pump to Carry, freight prepaid. Carry will return the repaired or replaced pump to Purchaser, freight prepaid. The repair or replacement of the pump shall not extend the duration of the one-year warranty term.

GOVERNING LAW: This warranty shall be governed and controlled by and enforced in accordance with the laws of the State of Michigan, U.S.A., in all respects.

FORUM: The parties agree they are of equal bargaining power and irrevocably submit to the jurisdiction and venue of the Circuit Court for the County of Tuscola, State of Michigan or, if original jurisdiction can be established, the United States District Court for the Eastern District of Michigan, Northern Division, with respect to any performance or breach of this agreement. The parties hereby stipulate that the venues referenced in this agreement are convenient to each of them.



REMINDER:
Mail in your WARRANTY REGISTRATION CARD
today!

CARRY MANUFACTURING, INC.
SINGLE AND THREE PHASE FOUNTAIN PUMP OWNERS MANUAL
FOUNTAIN PUMP
MODEL NUMBER EXPLANATION

Example No. F20150-123H

F	=	Fountain Pump	
2	=	Discharge:	(2) = 2" Female NPT (3) = 3" Female NPT
0150	=	Horsepower:	(0075) = 3/4 Horsepower (0150) = 1-1/2 Horsepower (0300) = 3 Horsepower
1	=	Phase:	(1) = Single Phase (3) = Three Phase
23	=	Voltage:	(20) = 200V (Three Phase Only) (23) = 230V (Single or Three Phase)
H	=	Orientation:	(V) = Vertical (H) = Horizontal

Thus a F20150-123H is a Fountain Pump with a 2" Female NPT Discharge, 1-1/2 Horsepower, Single Phase, 230V Horizontal design.

Please note: All Carry Fountain Pumps come standard with a 30' power lead. Other lengths are available upon request.

CARRY MANUFACTURING, INC.
SINGLE AND THREE PHASE FOUNTAIN PUMP OWNERS MANUAL
GENERAL PUMP INSTALLATION



In this section, information has been provided on the installation of the Carry Fountain Pump and its components. The installation will include both the Carry Fountain Pump and the control panel, if applicable. Carry's Fountain Pump was designed to pump high volumes of water. Both the Franklin Electric and Sumoto motors were specifically developed to live under water. The control panel was designed to provide accurate starting, running and overload protection.

The pump must be installed and operated correctly to keep it working at its utmost efficiency. This owner's manual has been developed to provide the owner and installer with as much information as possible to ensure satisfactory installation and operation. The following pages detail the specific instructions for each component of the installation. Following the installation information are several general information tips.

Before installation, check the bottom of the sump for debris, sand or muck. Remove as much as possible. The presence of debris in the sump could damage your submersible pump. Ideally, your sump site should be designed to prevent the accumulation of debris and sand.

Connect the discharge pipe to the pump discharge. Carry Fountain Pumps with a 2" discharge have 2" Female NPT threads for connecting to the discharge piping. Carry recommends using 2" Schedule 40 PVC male adapters to connect the discharge pipe to the Carry Fountain Pump. Carry Fountain Pumps with a 3" discharge have 3" Female NPT threads for connecting to the discharge piping. Use 3" Schedule 40 PVC male adapters to connect the discharge pipe to the Carry Fountain Pump.

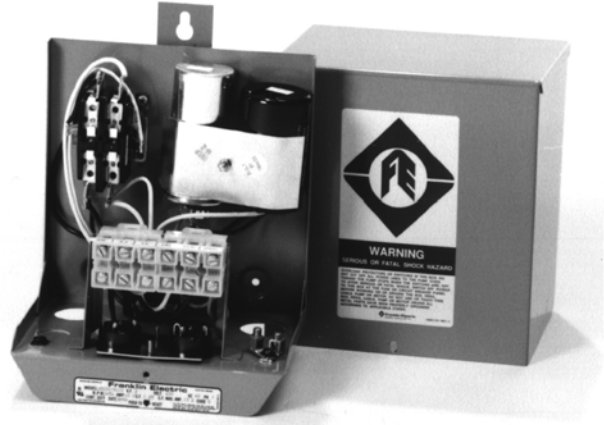
DO NOT lower the pump into the wet well by the power cord. This could damage the cord and cause an electrical hazard in the future. Position the pump in the center of the sump so the discharge pipe may be installed easier. Use nylon cord or electrical tape to attach the power cord vertically along the pump and the discharge pipe to avoid breakage. Make the final connections to the discharge pipe.

WARNING- Do not lift the pump using the power lead. Electrical shorts can occur and could damage the pump's motor and control panel.

CAUTION: USE EXTREME CARE WHEN WORKING AROUND PUMPS AND ELECTRICAL CONTROLS!
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CARRY MANUFACTURING, INC.
SINGLE AND THREE PHASE FOUNTAIN PUMP OWNERS MANUAL
FRANKLIN ELECTRIC SINGLE PHASE CONTROL PANEL
AND PANEL ENVIRONMENT

Franklin Electric control panels meet UL requirements for Type 3R enclosures. They are suitable for indoor and outdoor applications within temperatures of +14°F (-10°C) to 122°F (50°C). Operating control panels below +14°F can cause reduced starting torque and loss of overload protection, when overloads are located in control panels. During the coldest weather, temperature may be kept above +14°F by an enclosure around the control panel and using heat tape or a small light bulb in the enclosure as a heat source.



Control panels should never be mounted in direct sunlight or high temperature locations, as this will cause shortened capacitor life and the unnecessary tripping of overload protectors. A ventilated enclosure, painted white to reflect heat, is recommended for outdoor, high temperature locations.

The worst place to mount a control panel is in a damp well pit, or other humid location, as this accelerates component failure from voltage breakdown and corrosion.

Control panels with voltage relays are designed for vertical upright mounting only. Mounting in other positions will affect the operation of the relay.

Adapted from “Submersible Motors: Application, Installation, Maintenance.” Franklin Electric, September 1, 1993.

Please note: Carry 3/4 and 1-1/2 Horsepower, Single Phase, Fountain Pumps are available with either 2-wire or 3-wire motors. Carry Fountain Pumps with either Franklin Electric or Sumoto 2-wire motors **DO NOT** require the use of a separate control panel. These pumps may be wired directly into a circuit breaker or other type of disconnect. These pumps do require **proper overload protection**. Please specify 2-wire or 3-wire when ordering. All 3 Horsepower, Single Phase, Fountain Pumps have 3-wire motors only. If your pump has a 2-wire motor, you may disregard the following information on control panel wiring.

CARRY MANUFACTURING, INC.
SINGLE AND THREE PHASE FOUNTAIN PUMP OWNERS MANUAL
FRANKLIN ELECTRIC SINGLE PHASE, 230 VOLT CONTROL PANELS
INSTALLATION INSTRUCTIONS

Before any connections are made, verify that the power supply voltage, hertz, and KVA capacity match the motor requirements. Refer to Table 13 on page 13 of the Franklin Electric Submersible Motors Application, Installation and Maintenance Manual.

Illustrations of the electrical wiring diagrams have been provided for each horsepower pump as an example of how the control panel should be wired. Note: A wiring diagram should also have been included with the control panel. Following are detailed instructions of how to connect the wiring to the control panel. While following the written instructions, verify the connections with the control panel drawing that corresponds to the horsepower of the motor. The pump and control panel warranty will be voided for failure to follow these instructions. Make sure that all the connections are tight. Failure to do so, could result in damage to your pump system. These instructions refer to **SINGLE PHASE, 230 VOLT SYSTEMS ONLY!**

Make all electrical connections from the motor lead to the control panel per the detailed instructions. Install all ground rods and connect all ground wires. See detailed instructions for each component.



CARRY MANUFACTURING, INC.
SINGLE AND THREE PHASE FOUNTAIN PUMP OWNERS MANUAL
FRANKLIN ELECTRIC SINGLE PHASE, 230 VOLT CONTROL PANELS
WIRING INSTRUCTIONS

The incoming power source should be Single Phase, 230 Volts. There will be three (3) wires from the incoming power source. Two (2) of the wires will be connected to “L1” and “L2” on the terminal strip inside the control panel and the ground wire will be connected to the ground lug inside the control panel.

To connect the pump to the control panel, connect the wires as follows:

1. The white (or yellow) wire from the pump to the “Y” terminal on the terminal strip inside the control panel.
2. The black wire from the pump to the “B” terminal on the terminal strip inside the control panel.
3. The red wire from the pump to the “R” terminal on the terminal strip inside the control panel.
4. The ground wire from the pump to the ground lug inside the control panel.

Ground the control panel as follows:

1. Use wire at least as large as the line conductors.
2. Connect the wire to the ground lug and a ground rod.

We recommend this procedure when installing your control panel. If the control panel is not grounded with a ground rod, your pumping system could be seriously damaged.

CAUTION: Failure to ground the control panel frame can result in a serious electrical shock hazard if a circuit fault occurs.

Optional Low Level Shut Off (Sensor) Float connected as follows:

1. The black wire from the float to the “L2” terminal on the terminal strip inside the control panel.
2. The white wire from the float to the “SW” terminal on the terminal strip inside the control panel.

The float should be positioned at the minimum submergence level of the pump to prevent the pump running “dry.” Minimum Submergence for each pump is as follows:

Table 1: Single Phase Minimum Submergence

Single Phase Fountain Pump	Vertical	Horizontal
3/4 HP	24"	20"
1-1/2 HP	36"	24"
3 HP	34"	30"

CARRY MANUFACTURING, INC.

SINGLE AND THREE PHASE FOUNTAIN PUMP OWNERS MANUAL

3/4 HORSEPOWER SINGLE PHASE CONTROL PANEL

Model # 282-407-50 or 282-407-50T

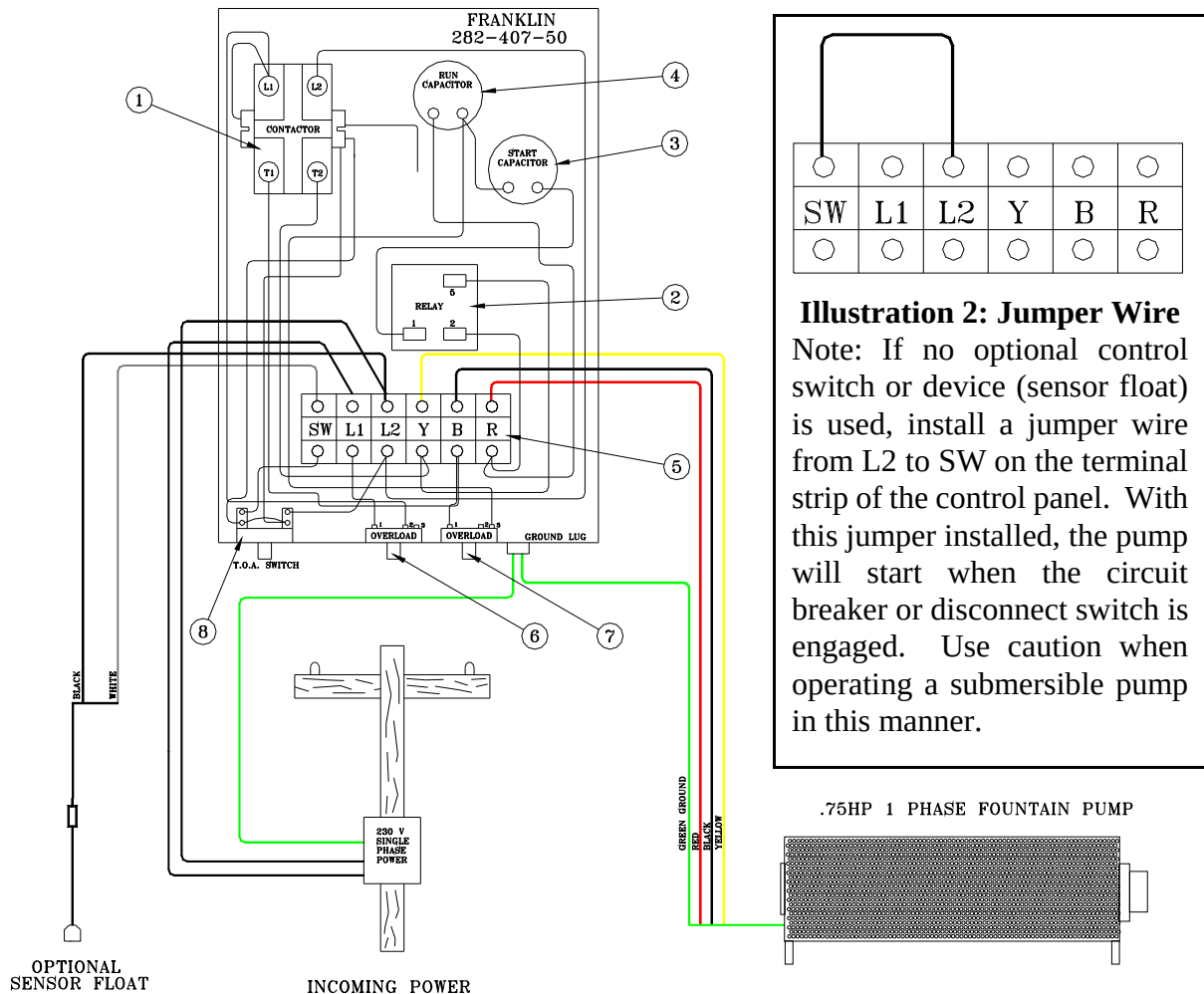


Illustration 2: Jumper Wire

Note: If no optional control switch or device (sensor float) is used, install a jumper wire from L2 to SW on the terminal strip of the control panel. With this jumper installed, the pump will start when the circuit breaker or disconnect switch is engaged. Use caution when operating a submersible pump in this manner.

.75HP 1 PHASE FOUNTAIN PUMP

<u>Item #:</u>	<u>Qty:</u>	<u>Description:</u>	<u>Part No.:</u>
1	1	Contactor	155-325-102
2	1	Relay	155-031-102
3	1	Start Capacitor	275-464-105
4	1	Run Capacitor	156-362-102
5	1	Terminal Block	- - -
6*	1	Auto-Off-Test Switch	SQD-ZB4BD8
	1	Switch Contact Block	SQDZB4BZ103

* Auto-Off-Test Switches are included on delux control panels only.

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SINGLE AND THREE PHASE FOUNTAIN PUMP OWNERS MANUAL

1-1/2 HORSEPOWER SINGLE PHASE CONTROL PANEL

Model #: 282-300-81 or 282-300-81T

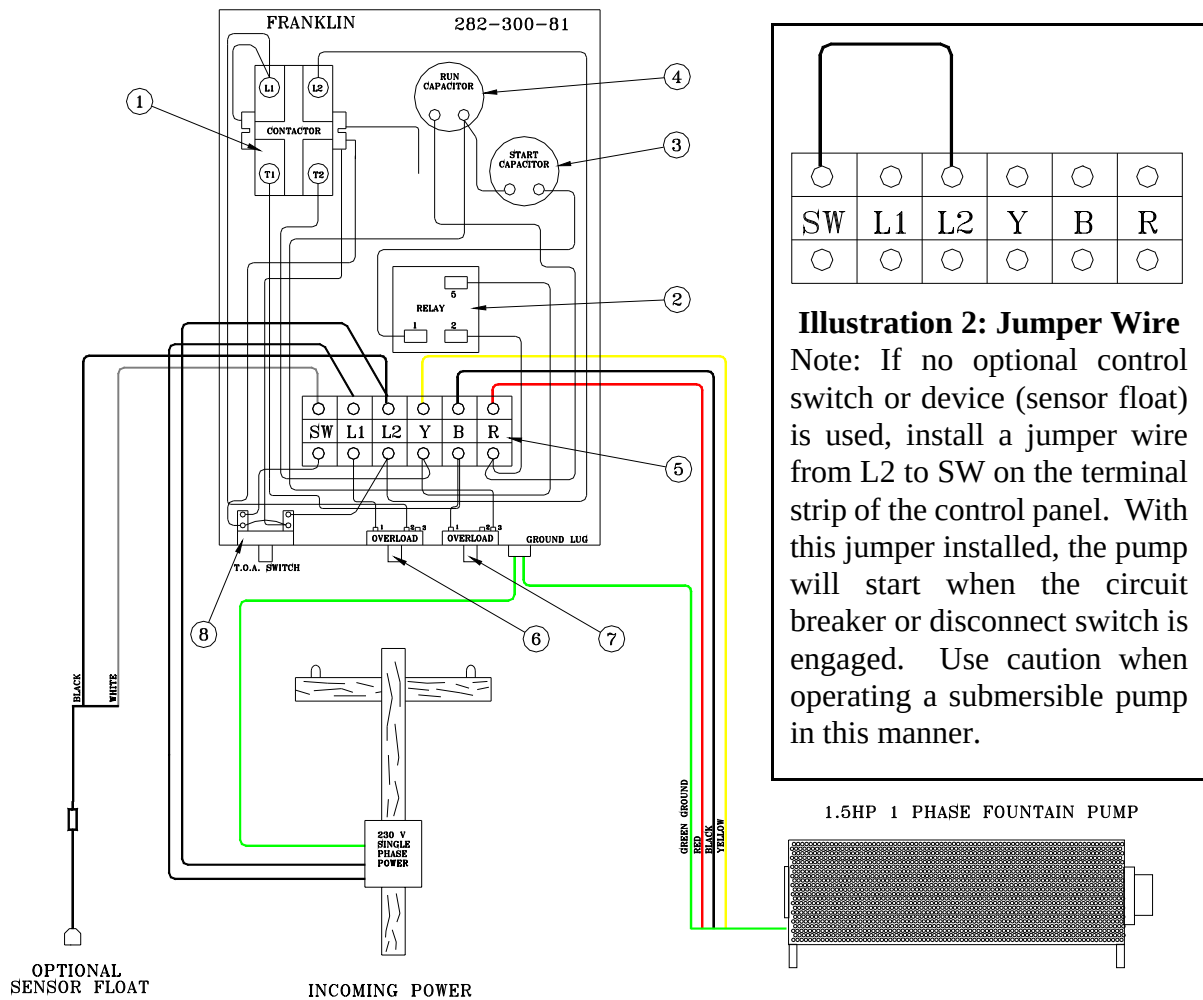


Illustration 3

<u>Item #:</u>	<u>Qty:</u>	<u>Description:</u>	<u>Part No.:</u>
1	1	Contactor	155-325-102
2	1	Relay	155-031-102
3	1	Start Capacitor	275-464-113
4	1	Run Capacitor	155-328-102
5	1	Terminal Block	- - -
6*	1	Auto-Off-Test Switch	SQD-ZB4BD8
	1	Switch Contact Block	SQDZB4BZ103

*Auto-Off-Test Switches are included on delux control panels only.

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SINGLE AND THREE PHASE FOUNTAIN PUMP OWNERS MANUAL

3 HORSEPOWER SINGLE PHASE CONTROL PANEL

Model #: 282-302-83 or 282-302-83T

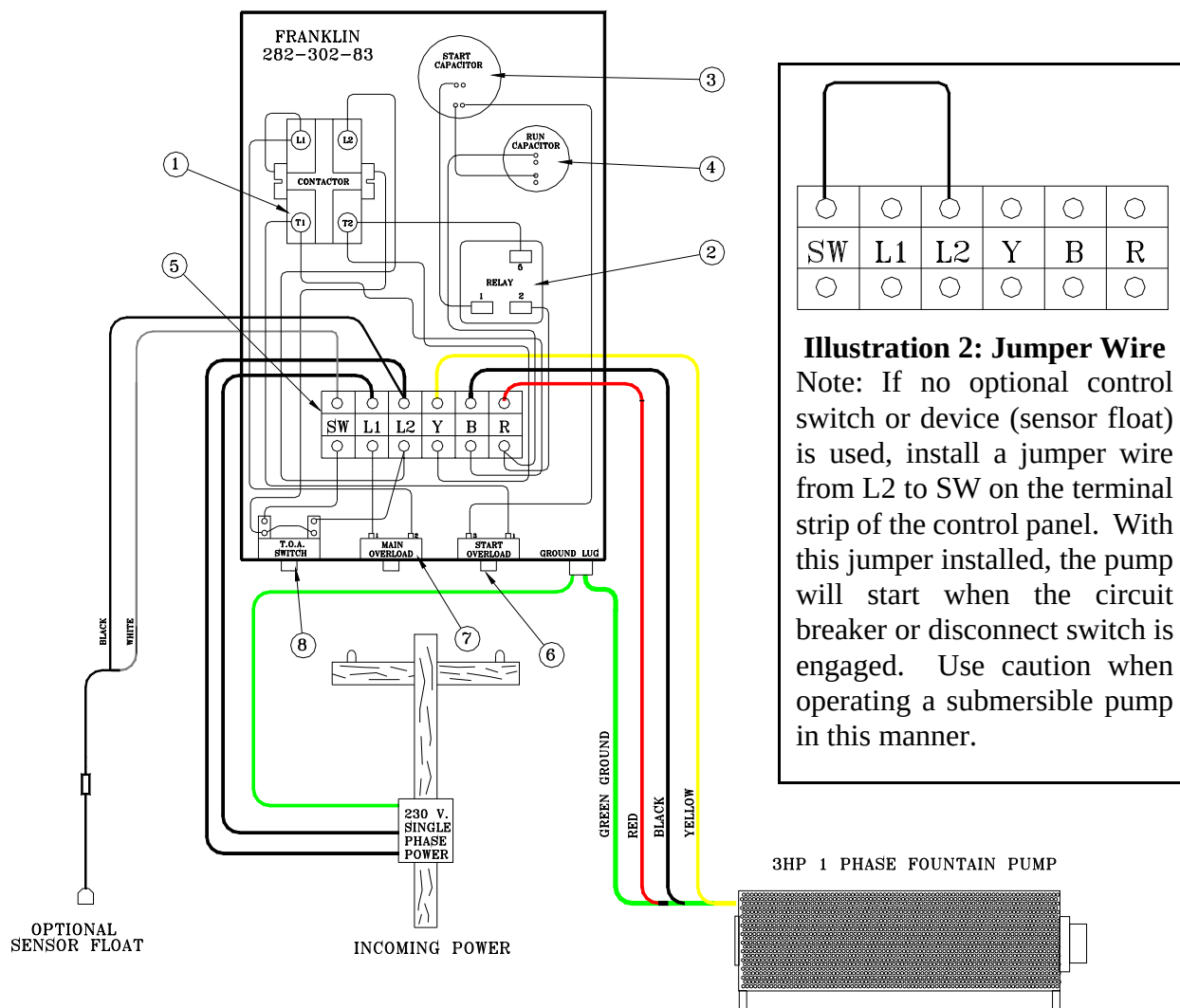


Illustration 2: Jumper Wire

Note: If no optional control switch or device (sensor float) is used, install a jumper wire from L2 to SW on the terminal strip of the control panel. With this jumper installed, the pump will start when the circuit breaker or disconnect switch is engaged. Use caution when operating a submersible pump in this manner.

<u>Item #:</u>	<u>Qty:</u>	<u>Description:</u>	<u>Part No.:</u>
1	1	Contactor	155-325-102
2	1	Relay	155-031-102
3	1	Start Capacitor	275-463-123
4	1	Run Capacitor	155-327-109
5	1	Terminal Block	- - -
6	1	Start Overload	275-411-108
7	1	Main Overload	275-411-115
8*	1	Auto-Off-Test Switch	SQD-ZB4BD8
	1	Switch Contact Block	SQDZB4BZ103

*Auto-Off-Test Switches are included on delux control panels only.

CARRY MANUFACTURING, INC.

SINGLE AND THREE PHASE FOUNTAIN PUMP OWNERS MANUAL

THREE PHASE CONTROL PANEL AND PANEL ENVIRONMENT

Carry designed Three Phase Control Panels use Type 3R enclosures. They are suitable for indoor and outdoor applications within temperatures of +14°F (-10°C) to 122°F (50°C). Operating control panels below +14°F can cause reduced starting torque and loss of overload protection, when overloads are located in control panels. During the coldest weather, temperature may be kept above +14°F by an enclosure around the control panel and using heat tape or a small light bulb in the enclosure as a heat source.



Control panels should never be mounted in direct sunlight or high temperature locations, as this will cause shortened life expectancy of the components. A ventilated enclosure, painted white to reflect heat, is recommended for outdoor, high temperature locations.

The worst place to mount a control panel is in a damp well pit, or other humid location, as this accelerates component failure from voltage breakdown and corrosion.

CARRY MANUFACTURING, INC.

SINGLE AND THREE PHASE FOUNTAIN PUMP OWNERS MANUAL

THREE PHASE CONTROL PANEL INSTALLATION INSTRUCTIONS

Before any connections are made, verify that the power supply voltage, hertz and KVA capacity match the motor requirements. Refer to Table 22 on page 22 of the Franklin Electric Submersible Motor Application, Installation and Maintenance manual.

Illustrations of the electrical wiring diagrams have been provided for a standard and delux panel as an example of how the control panel should be wired. Note: A wiring diagram should also have been included with the control panel. Below are detailed instructions of how to connect the wiring to the control panel. While following the written instructions, verify the connections with the control panel drawing that corresponds to your control panel. Special control panel diagrams (with special components or additional functionality) will be placed at the back of this manual. Pump and control panel warranty will be voided for failure to follow these instructions. Make sure that all the connections are tight. Failure to do so, could result in damage to your pump system. These instructions refer to **THREE PHASE SYSTEMS ONLY!** Make all electrical connections from the motor lead to the control panel per the detailed instructions. Install all ground rods and connect all ground wires. See detailed instructions for each component.

THREE PHASE STANDARD and DELUX CONTROL PANEL WIRING DIAGRAM

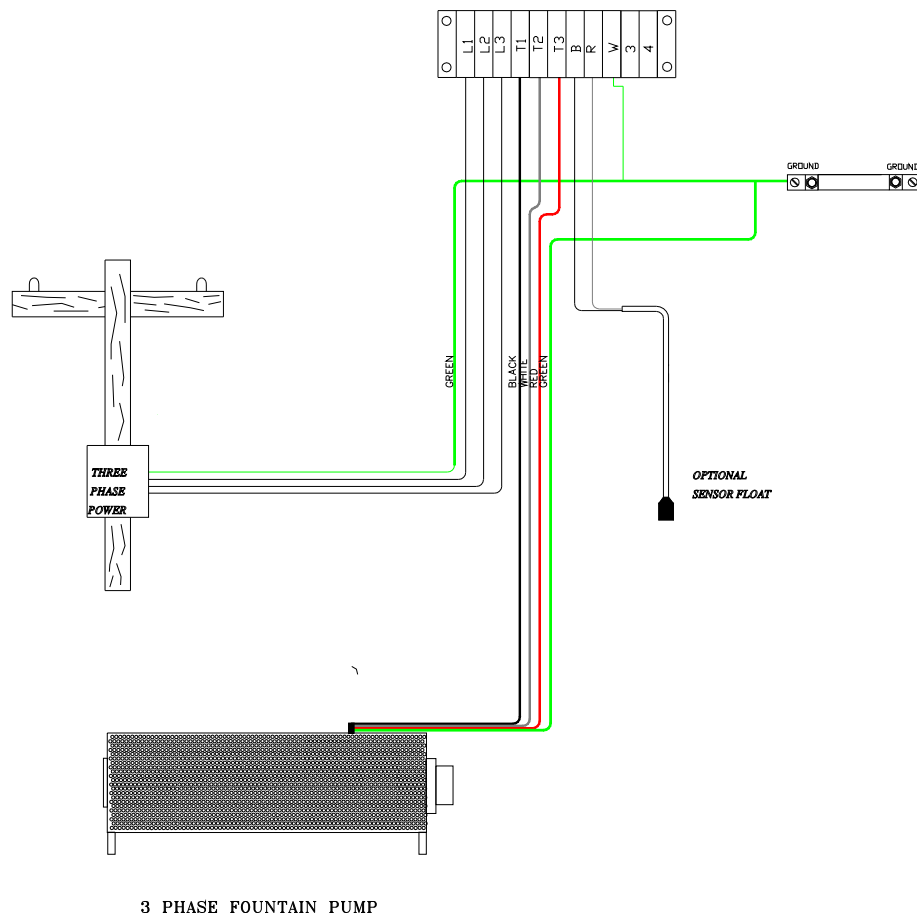


Illustration 5

CARRY MANUFACTURING, INC.

SINGLE AND THREE PHASE FOUNTAIN PUMP OWNERS MANUAL

WIRING INSTRUCTIONS

The incoming power source should be three phase, and either 200 or 230 volts. There will be four (4) wires from the incoming power source. Three (3) of the wires will be connected to "L1" "L2" and "L3" on the terminal strip inside the control panel and the ground wire will be connected to the ground lug inside the control panel.

To connect the pump to the control panel, connect the wires as follows:

- 1) The black wire from the pump to the "1T1" on the terminal strip inside the control panel.
- 2) The white (or yellow) wire from the pump to the "1T2" on the terminal strip inside the control panel
- 3) The red wire from the pump to the "1T3" on the terminal strip inside the control panel.
- 4) The ground wire from the pump to the ground lug inside the control panel.

Or as specified on the specific wiring diagram located at the back of this manual. Note: if the pump runs backwards, swap two of the leads, either 1T1 and 1T2 or 1T1 and 1T3 or 1T2 and 1T3.

Ground the control panel as follows:

- 1) Use a minimum of 8 AWG wire for services up to 125 AMPS.
- 2) Use a minimum of 6 AWG wire for services up to 175 AMPS.
- 3) Use a minimum of 4 AWG wire for services up to 250 AMPS.
- 4) Connect the wire to the ground lug and a ground rod.

We recommend this procedure when installing your control panel. If the control panel is not grounded with a ground rod your pumping system could be seriously damaged.

CAUTION: Failure to ground the control panel frame can result in a serious electrical shock hazard if a circuit fault occurs.

Optional Low Level Shut Off (Sensor) Float connected as follows:

1. The black wire from the float to the "B" terminal on the terminal strip inside the control panel.
2. The white wire from the float to the "R" terminal on the terminal strip inside the control panel.

The float should be positioned at the minimum submergence level of the pump to prevent the pump running "dry." Minimum Submergence for each pump is as follows:

Table 2: Three Phase Minimum Submergence

Three Phase Fountain Pump	Vertical	Horizontal
3/4 HP	24"	20"
1-1/2 HP	36"	24"
3 HP	31"	30"

CARRY MANUFACTURING, INC.

SINGLE AND THREE PHASE FOUNTAIN PUMP OWNERS MANUAL

THREE PHASE STANDARD CONTROL PANEL

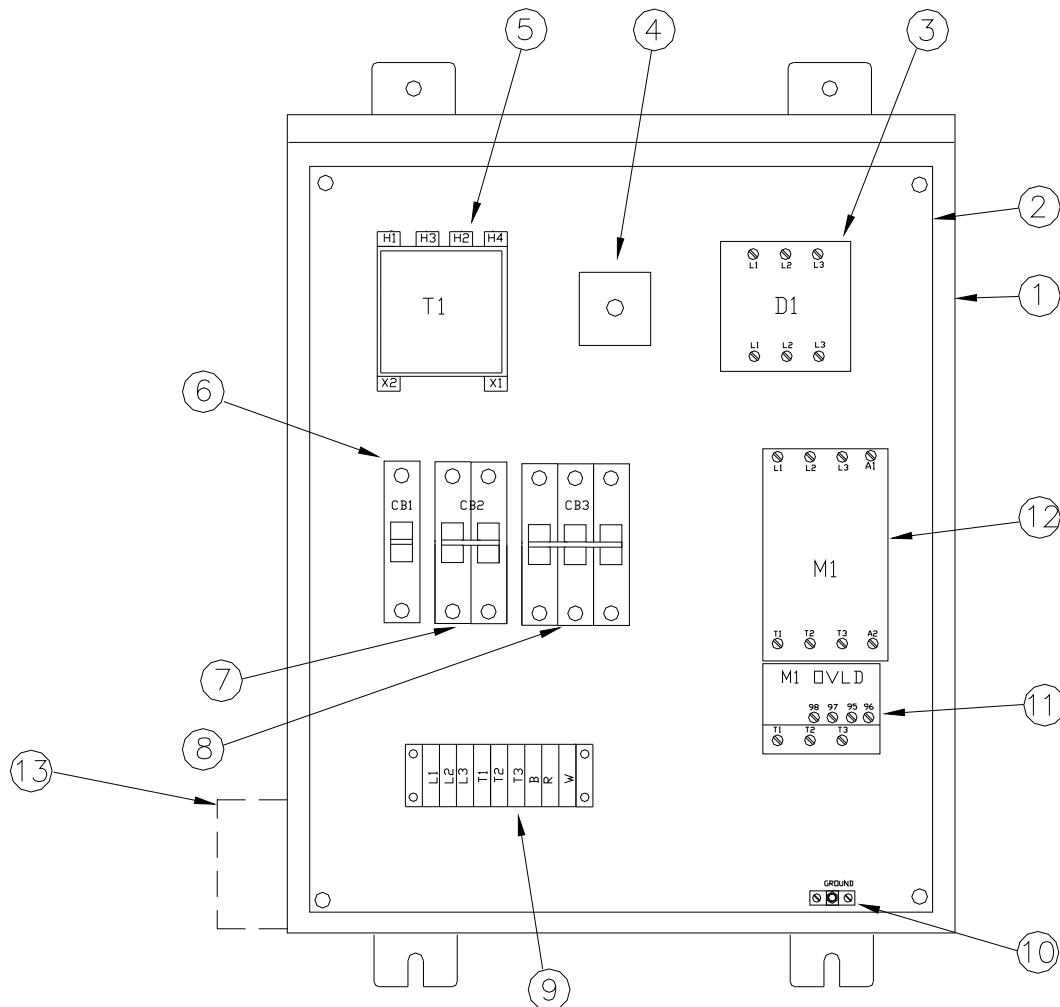


Illustration 6

<u>Item #:</u>	<u>Qty:</u>	<u>Description:</u>	<u>Part No.:</u>
1	1	NEMA 3R Enclosure (20" x 16" x 8")	20R1606LP
2	1	Sub Panel	20P16
3	1	Disconnect Switch w/ Handle	KSR3.40 ASSEMBLY
4	1	Transformer	See Table on page 18.
5	1	Circuit Breaker - 1 AMP, 1 POLE	WMZS1D01
6	1	Circuit Breaker - 1 AMP, 2 POLE	WMZS2D01
7	1	Circuit Breaker - 3 POLE	See Table on page 18.
8	1	Terminal Strip	---
9	2	Ground Lug	---
10	1	Overload Relay	See Table on page 18.
11	1	Contactor	See Table on page 18.
12*	1	Lightning Arrestor (optional)	155-440-902

CARRY MANUFACTURING, INC.

SINGLE AND THREE PHASE FOUNTAIN PUMP OWNERS MANUAL

THREE PHASE DELUX CONTROL PANEL

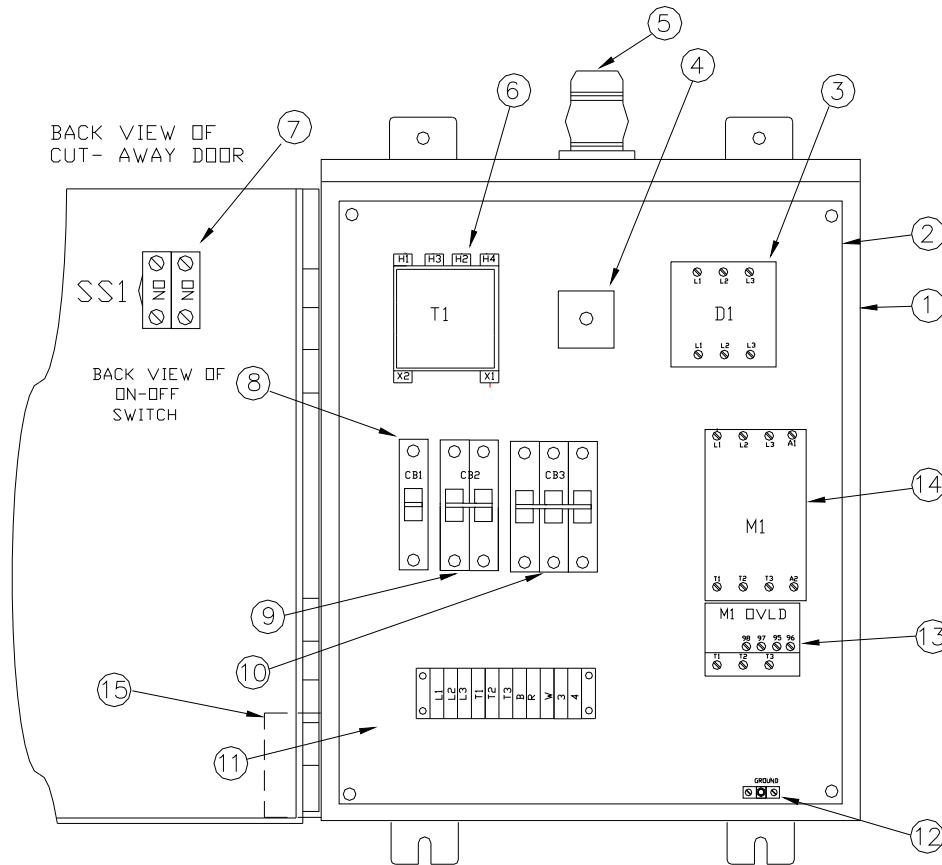


Illustration 7

<u>Item #:</u>	<u>Qty:</u>	<u>Description:</u>	<u>Part No.:</u>
1	1	NEMA 3R Enclosure (20" x 16" x 8")	20R1606LP
2	1	Sub Panel	20P16
3	1	Disconnect Switch w/ Handle	KSR3.40 ASSEMBLY
4	1	Pump Run Light	ML-GREEN
5	1	Transformer	See Table on page 18.
6	1	Auto-Off-Test Switch	SQD-ZB4BD8
	1	Contact Block	SQDZB4BZ103
7	1	Circuit Breaker - 1 AMP, 1 POLE	WMZS1D01
8	1	Circuit Breaker - 1 AMP, 2 POLE	WMZS2D01
9	1	Circuit Breaker - 3 POLE	See Table on page 18.
10	1	Terminal Strip	---
11	2	Ground Lug	---
12	1	Overload Relay	See Table on page 18.
13	1	Contactor	See Table on page 18.
14*	1	Lightning Arrestor (optional)	155-440-902

CARRY MANUFACTURING, INC.

SINGLE AND THREE PHASE FOUNTAIN PUMP OWNERS MANUAL

JUMPER WIRE FOR THREE PHASE PANELS

Note: If no optional control switch or device (sensor float) is used, install a jumper wire from B to R on the terminal strip of the control panel. With this jumper wire installed, the pump will start when the circuit breaker or disconnect switch is engaged. Use caution when operating a submersible pump in this manner.

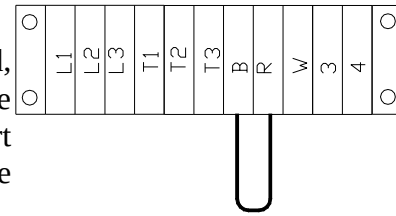


Illustration 8

THREE PHASE CONTROL PANEL PARTS

Table 3: Transformer

TRANSFORMER	
200V	230V
SQD9070T100D3 or PH100MGJ	SQD9070T100D1 or PH100MQMJ

Table 4: Circuit Breaker

CIRCUIT BREAKER		
HP	200V	230V
3/4 HP	WMZT3D06	WMZT3D06
1-1/2 HP	WMZT3D10	WMZT3D08
3 HP	WMZT3D15	WMZT3D13

Table 5: Motor Contactor and Overload

CONTACTOR and OVERLOAD			
HP		200V	230V
3/4 HP	CONTACTOR	GH15BN-3-10A	GH15BN-3-10A
	OVERLOAD	RTD32-600	RTD32-400
1-1/2 HP	CONTACTOR	GH15BN-3-10A	GH15BN-3-10A
	OVERLOAD	RTD32-900	RTD32-600
3 HP	CONTACTOR	GH15DN-3-10A	GH15CN-3-10A
	OVERLOAD	RTD32-1400	RTD32-1100

See Tables 28 and 29 on pages 28 and 29 of the Franklin Electric Submersible Motor Application, Installation and Maintenance manual for more information on setting adjustable relays. Your control panel should have been set to the correct value at the factory. It is a good idea to double check this setting.

CARRY MANUFACTURING, INC.

SINGLE AND THREE PHASE FOUNTAIN PUMP OWNERS MANUAL

FRANKLIN ELECTRIC THREE PHASE CONTROL PANELS

The Technology behind Smartstart

Smart - Start safely even without calibration! Smartstart patent pending technology predicts a safer operation range for your motor and protects the motor if the starter's FLA dial is set too high.

Intelligent - Smartstart detects if your starter needs to be calibrated, protecting you from operators trying to overcome motor jams or problems by over-setting the overload. With Smartstart enabled, if the starter isn't in range, it alarms and trips notifying you before damage occurs.

Active - Smartstart detects harmful extended starting conditions with maximum time to start. Monitors motor inrush current conditions and trips if the motor doesn't start within 10 seconds, regardless of FLA setting.

Ingenious - Active current monitoring provides superior protection against locked rotor and stall conditions, tripping faster than a standard inverse trip curve.



Integrated electronic motor and pump protection

- Class S electronic overload
 - - specifically designed protection for submersible motors
 - - built in 1.15 service factor compensation
- Underload (dry-run protection)
- Current phase unbalance protection
- Cycle fault protection
- Locked rotor and stall protection
- Out of Calibration - detects if overload FLA dial is improperly set

Multi-voltage operating range with automatic I/O

- Accepts 200-600 VAC directly - true plug and play
- Includes a dry contact auto-run input and fault relay output
- Optional run timer - adjustable up to 12 hours (Starter will run for selected time then return to OFF until another run command is given)

Industrial grade construction

- Door mounted heavy-duty HOA switch
- Housed in an outdoor rated, gasketed, NEMA 3R enclosure
- NEMA/IEC rated magnetic contactors feature 2.5 million electrical cycles at full rated current

Optional circuit breaker disconnect (Service Entrance rated)

- UL 489 circuit breaker provides branch and short circuit protection
- No fuses required - saves time and money
- Lockable handle for safety

CARRY MANUFACTURING, INC.
SINGLE AND THREE PHASE FOUNTAIN PUMP OWNERS MANUAL

**FRANKLIN ELECTRIC THREE PHASE CONTROL PANEL
INSTALLATION INSTRUCTIONS**

Before any connections are made, verify that the power supply voltage, hertz, and KVA capacity match the motor requirements. Refer to Table 22 on page 22 of the Franklin Electric Submersible Motor Application, Installation and Maintenance manual.

Illustrations of the electrical wiring diagrams have been provided for a standard and delux panel as an example of how the control panel should be wired. Note: A wiring diagram should also have been included with the control panel. Below are detailed instructions of how to connect the wiring to the control panel. While following the written instructions, verify the connections with the control panel drawing that corresponds to your control panel. Special control panel diagrams (with special components or additional functionality) will be placed at the back of this manual. Pump and control panel warranty will be voided for failure to follow these instructions. Make sure that all the connections are tight. Failure to do so, could result in damage to your pump system. These instructions refer to **THREE PHASE SYSTEMS ONLY!** Make all electrical connections from the motor lead to the control panel per the detailed instructions. Install all ground rods and connect all ground wires. See detailed instructions for each component.



CARRY MANUFACTURING, INC.
SINGLE AND THREE PHASE FOUNTAIN PUMP OWNERS MANUAL
FRANKLIN ELECTRIC THREE PHASE CONTROL PANEL
WIRING INSTRUCTIONS

The incoming power source should be three phase, and either 200 or 230 volts. There will be four (4) wires from the incoming power source. Three (3) of the wires will be connected to "L1", "L2" and "L3" on the Breaker/Disconnect Switch inside the control panel and the ground wire will be connected to the ground lug inside the control panel.

To connect the pump to the control panel, connect the wires as follows:

- 1) The black wire from the pump to the "T1" on the contactor inside the control panel.
- 2) The white (or yellow) wire from the pump to the "T2" on the contactor inside the control panel
- 3) The red wire from the pump to the "T3" on the contactor inside the control panel.
- 4) The ground wire from the pump to the ground lug inside the control panel.

Or as specified on the specific wiring diagram located at the back of this manual. Note: if the pump runs backwards, swap two of the leads, either T1 and T2 or T1 and T3 or T2 and T3.

Ground the control panel as follows:

- 1) Use a minimum of 8 AWG wire for services up to 125 AMPS.
- 2) Use a minimum of 6 AWG wire for services up to 175 AMPS.
- 3) Use a minimum of 4 AWG wire for services up to 250 AMPS.
- 4) Connect the wire to the ground lug and a ground rod.

We recommend this procedure when installing your control panel. If the control panel is not grounded with a ground rod your pumping system could be seriously damaged.

CAUTION: Failure to ground the control panel frame can result in a serious electrical shock hazard if a circuit fault occurs.

Optional Low Level Shut Off (Sensor) Float connected as follows:

1. The black wire from the float to the "B" terminal on the terminal strip inside the control panel.
2. The white wire from the float to the "R" terminal on the terminal strip inside the control panel.

The float should be positioned at the minimum submergence level of the pump to prevent the pump running "dry." Minimum Submergence for each pump is as follows:

Table 2: Three Phase Minimum Submergence

Three Phase Fountain Pump	Vertical	Horizontal
3/4 HP	24"	20"
1-1/2 HP	36"	24"
3 HP	31"	30"

CARRY MANUFACTURING, INC.
SINGLE AND THREE PHASE FOUNTAIN PUMP OWNERS MANUAL
FRANKLIN ELECTRIC THREE PHASE STANDARD CONTROL PANEL

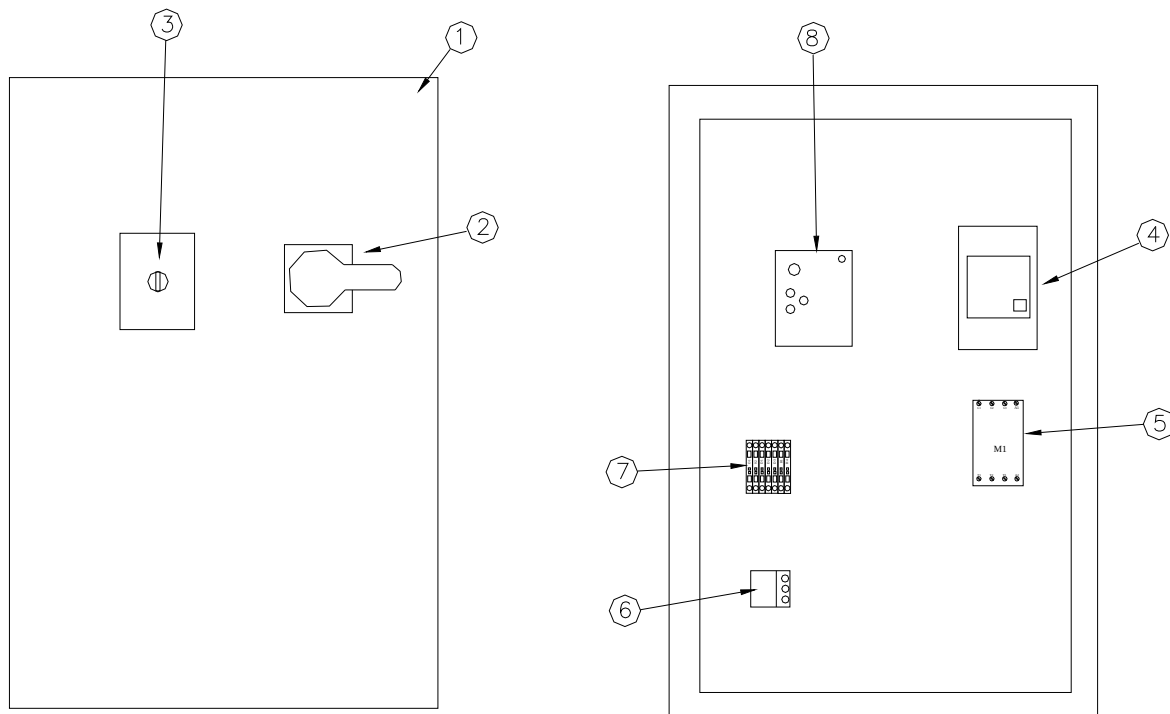


Illustration 9

<u>Item #:</u>	<u>Qty:</u>	<u>Description:</u>	<u>Part #:</u>
1	1	Enclosure	---
2	1	Disconnect Handle	EHU-1/12
3	1	Selector Switch	HW1S-3TFO
4	1	Breaker/Disconnect Switch	TD125NU FTU 125 15A for 3/4 & 1-1/2 HP Pumps TD125NU FTU 125 20A for 3HP Pumps
5	1	Contactor	MRC-18B-24VAC
6	1	Ground Lugs	---
7	1	Terminal Strip	SK4
8	1	Starter Module	RG41

CARRY MANUFACTURING, INC.
SINGLE AND THREE PHASE FOUNTAIN PUMP OWNERS MANUAL
FRANKLIN ELECTRIC THREE PHASE DELUX CONTROL PANEL

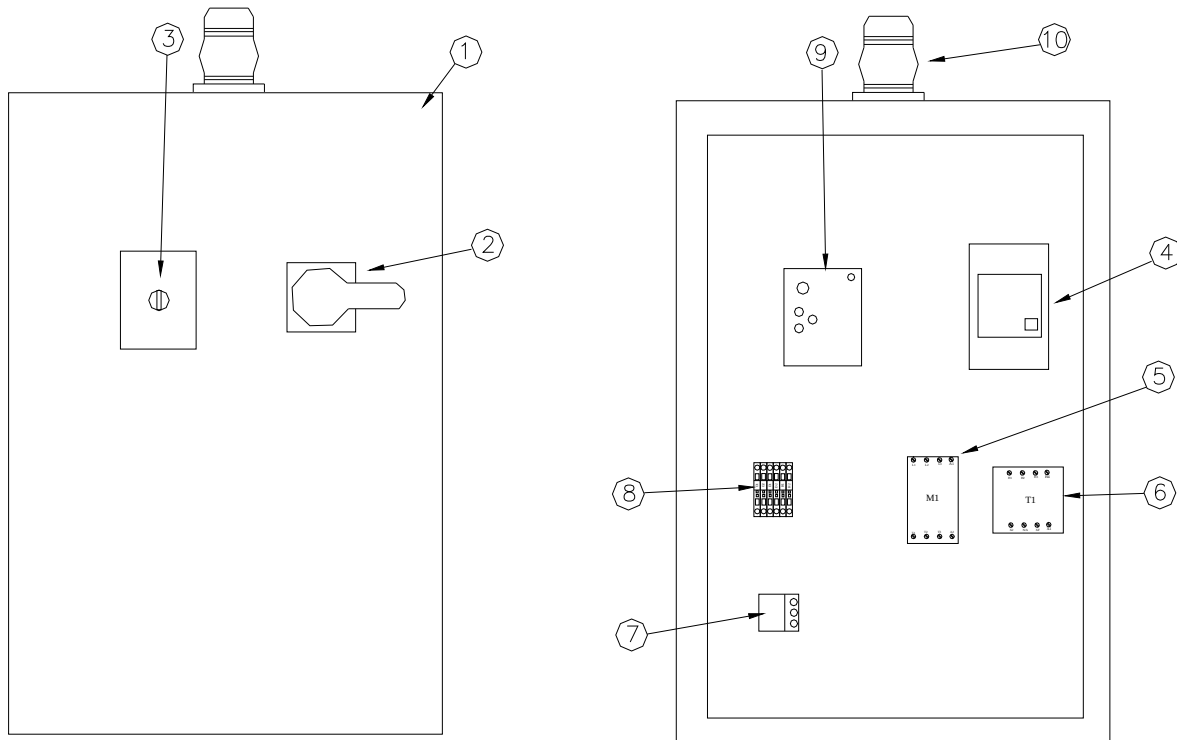


Illustration 10

<u>Item #:</u>	<u>Qty:</u>	<u>Description:</u>	<u>Part #:</u>
1	1	Enclosure	- - -
2	1	Disconnect Handle	EHU-1/12
3	1	Selector Switch	HW1S-3TFO
4	1	Breaker/Disconnect Switch	TD125NU FTU 125 15A for 3/4 & 1-1/2 HP Pumps TD125NU FTU 125 20A for 3 HP Pumps
5	1	Contactor	MRC-18B-24VAC
6	1	Transformer	B100MBT13XK
7	1	Ground Lugs	- - -
8	1	Terminal Strip	SK4
9	1	Starter Module	RG41
10	1	Run Light - Green	ML-GREEN

CARRY MANUFACTURING, INC.

SINGLE AND THREE PHASE FOUNTAIN PUMP OWNERS MANUAL

FRANKLIN ELECTRIC SUBMERSIBLE MOTORS

Carry Fountain Pumps come complete with either a Franklin Electric or Sumoto Submersible Motor installed inside a PVC strainer screen. Carry Fountain Pumps with Franklin Electric motors are available in:

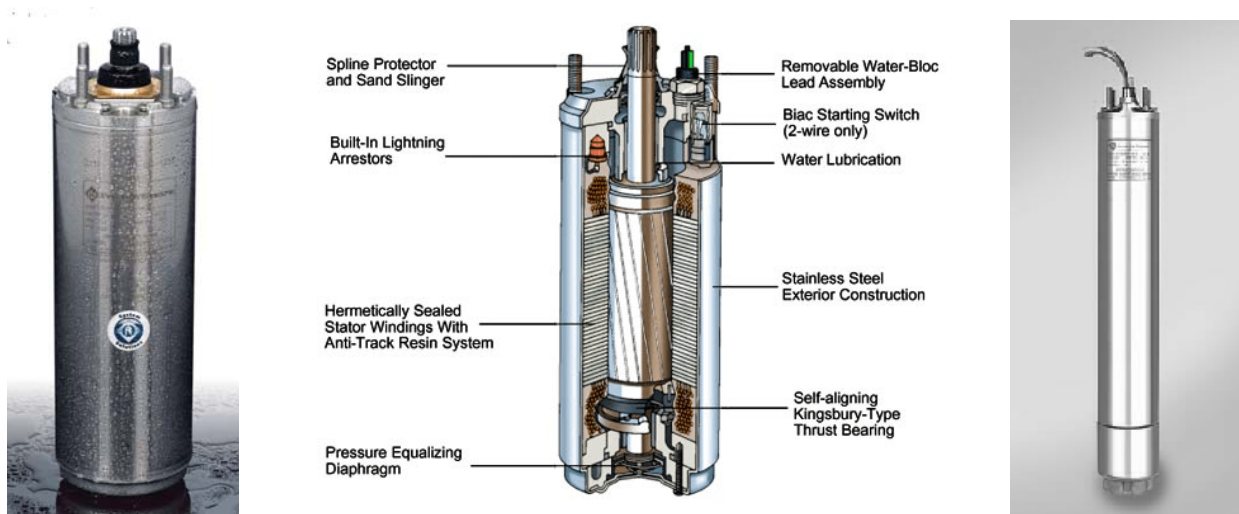
3/4HP/1PH/230V/2 or 3-wire	or	3/4HP/3PH/200V or 230V
1-1/2HP/1PH/230V/2 or 3-wire	or	1-1/2HP/3PH/200V or 230V
3HP/1PH/230V/3-wire	or	3HP/3PH/200V or 230V

Franklin Electric motors were “Designed to Live Underwater” and will run indefinitely in water. Why can these motors stay under water indefinitely? The motors were designed to protect its electrical windings from water while allowing the entire motor to be submerged and cooled by water. Other reasons include the following:

1. Windings are completely hermetically sealed in a steel enclosure with both the outer and inner casings of stainless steel. The enclosure is surrounded and cooled by water.
2. Its rotor, consisting only of laminations and a copper or aluminum cage, runs in water with no ill effect but with the most effective cooling possible, a direct immersion in water.
3. Its bearings, both radial and thrust, are completely submerged in clean water. They require no other lubrication and therefore have an everlasting source of lubrication water.

These features make Franklin Electric Submersible Motors highly efficient while reducing the possibilities of rust and wear on components.

To assist in the pump installation, refer to the Franklin Electric Submersible Motor Application, Installation and Maintenance manual for more information.



CARRY MANUFACTURING, INC.
SINGLE AND THREE PHASE FOUNTAIN PUMP OWNERS MANUAL
SUMOTO SUBMERSIBLE MOTORS

Some Carry Fountain Pumps are available with a Sumoto Submersible Motor installed inside a PVC strainer screen. Carry uses the OP4 series of Sumoto Motors for our Fountain pumps. These motors are available in:

3/4HP/1PH/230V/2-wire	or	3/4HP/3PH/230V
1-1/2HP/1PH/230V/2-wire	or	1-1/2HP/3PH/230V
		3HP/3PH/230V

All other Fountain Pump models must use Franklin Electric motors. Please specify a Sumoto motor when ordering.



Sumoto Submersible Motors feature an improved mechanical design combined with optimized efficiency in electromagnetic design to deliver reliable, durable and efficient operation.

- NEMA coupling for universal fit
- Removable 4-wire cable with watertight connector with integral grounding system
- Labyrinth seal with a sand slinger
- Rotary mechanical seal with graphic/ceramic mating faces for durability
- Food grade dielectric fluid for long life and superior cooling
- Corrosion resistant AISI 304SS motor frame and base end
- AISI 303SS shaft end
- Upper side bracket is made of nickel plated cast iron
- Ball bearing type radial and thrust bearings

CARRY MANUFACTURING, INC.
SINGLE AND THREE PHASE FOUNTAIN PUMP OWNERS MANUAL
3/4 HP VERTICAL FOUNTAIN PUMP - EXPLODED VIEW

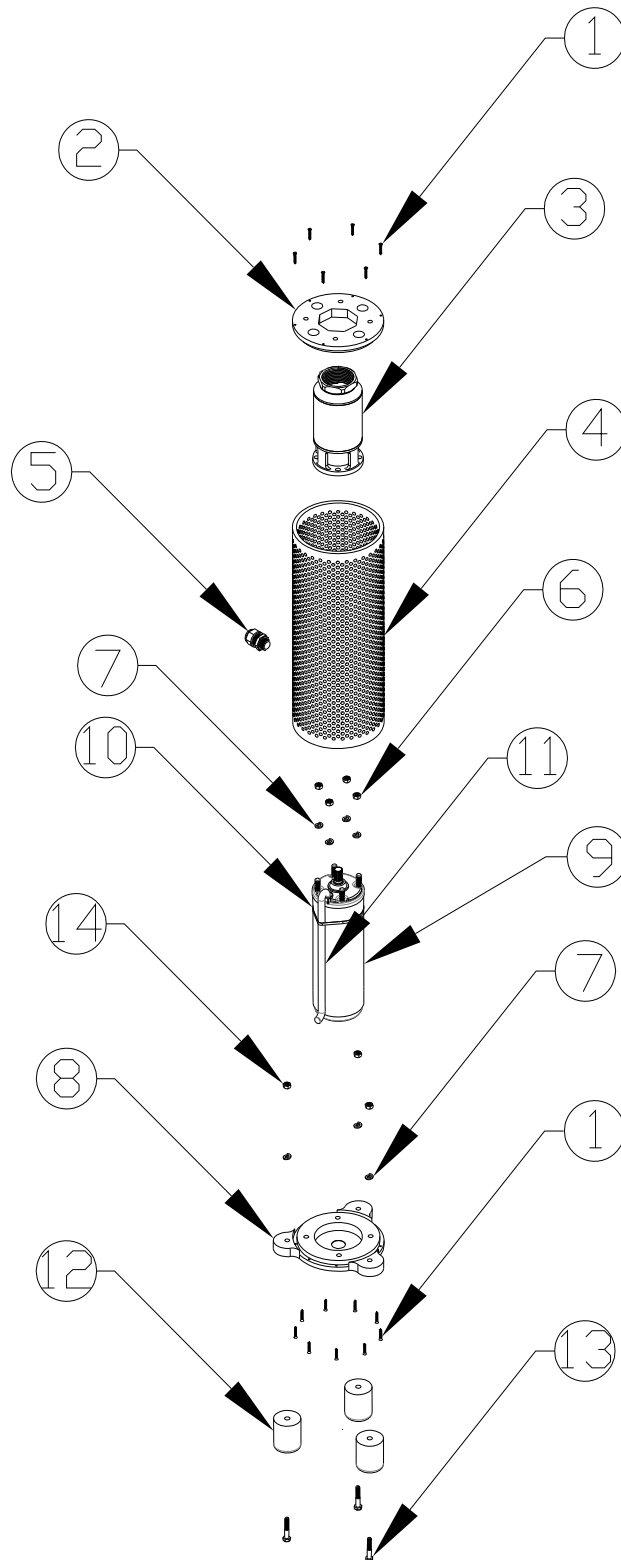


Illustration 11

CARRY MANUFACTURING, INC.
SINGLE AND THREE PHASE FOUNTAIN PUMP OWNERS MANUAL

BILL OF MATERIALS: 3/4 HP VERTICAL FOUNTAIN PUMP

Refer to Illustration 11:

<u>Item #:</u>	<u>Description:</u>	<u>Qty:</u>	<u>Part #:</u>	<u>Construction Materials:</u>
1	Screen Screw, #6, 1" long	15	70211	304 SS
2	Fountain Pump Screen Top - Vertical	1	80445	HDPE
3	Pump Head Assembly with 2" Discharge	1	SPP9001- Assembly	304 SS
4	Fountain Pump Screen	1	80410	Sch 40 PVC
5	1/2" NPT Cord Connector - 2-Wire Motors	1	FGB21L-10B	Plastic
	3/4" NPT Cord Connector - 3-Wire Motors	1	FGB26-18B	Plastic
6	5/16"-24 Hex Head Nut	4	40204	304 SS
7	5/16" Lock Washer	7	50202	304 SS
8	Fountain Pump Screen Bottom - Vertical	1	80450	HDPE
9	3/4 HP Motor	1	See Invoice for Motor Information.	
10	14" Cable Tie	1	Tie-14-15"	Plastic
11	30' Motor Lead - 2-Wire Motors	1	40501	SJEOW
	30' Motor Lead - 3-Wire Motors	1	40502	SJEOW
12	Pump Base Pad	3	50122	Buna Rubber
13	5/16"-18 x 2-1/2" Hex Head Bolt	3	50216	304 SS
14	5/16"-18 Hex Head Nut	3	50204	304 SS

CARRY MANUFACTURING, INC.
SINGLE AND THREE PHASE FOUNTAIN PUMP OWNERS MANUAL
1-1/2 HP VERTICAL FOUNTAIN PUMP - EXPLODED VIEW

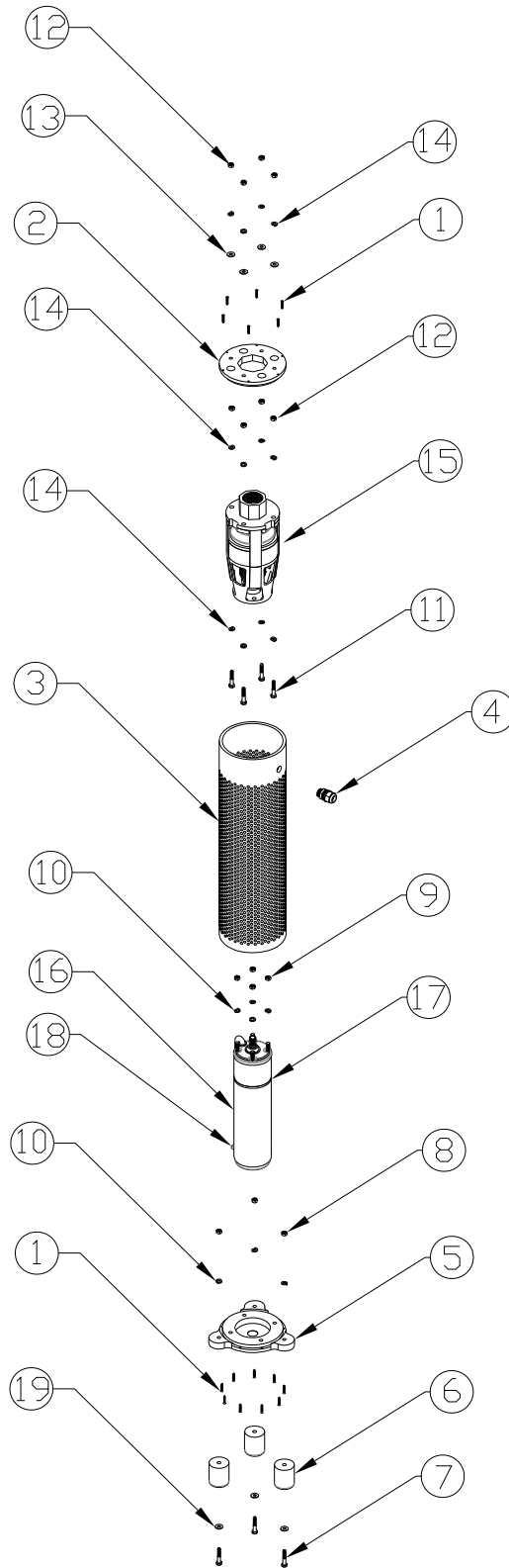


Illustration 12

CARRY MANUFACTURING, INC.
SINGLE AND THREE PHASE FOUNTAIN PUMP OWNERS MANUAL

BILL OF MATERIALS: 1-1/2 HP VERTICAL FOUNTAIN PUMP

Refer to Illustration 12:

<u>Item #:</u>	<u>Description:</u>	<u>Qty:</u>	<u>Part #:</u>	<u>Construction Materials:</u>
1	Screen Screw, #6, 1" long	15	70211	304 SS
2	Fountain Pump Screen Top - Vertical	1	80440	HDPE
3	Fountain Pump Screen	1	80410	Sch 40 PVC
4	1/2" NPT Cord Connector - 2-Wire Motors	1	FGB21L-10B	Plastic
	3/4" NPT Cord Connector - 3-Wire Motors	1	FGB26-18B	Plastic
5	Fountain Pump Screen Bottom - Vertical	1	80450	HDPE
6	Pump Base Pad	3	50122	Buna Rubber
7	5/16"-18 x 3" Hex Head Bolt	3	50208	304 SS
8	5/16"-18 Hex Head Nut	3	50204	304 SS
9	5/16"-24 Hex Head Nut	4	40204	304 SS
10	5/16" Lock Washer	7	50202	304 SS
11	7/16"-14 x 2-1/2" Hex Head Bolt	4	50230	304 SS
12	7/16"-14 Hex Head Nut	8	50231	304 SS
13	7/16" Flat Washer	4	50232	304 SS
14	7/16" Lock Washer	12	50233	304 SS
15	Pump Head Assembly with 2" or 3" Discharge	1	55SS851- Assembly	304 SS
16	1-1/2 HP Motor	1	See Invoice for Motor Information.	
17	14" Cable Tie	1	Tie-14-15"	Plastic
18	30' Motor Lead - 2-Wire Motors	1	40501	SJEOW
	30' Motor Lead - 3-Wire Motors	1	40502	SJEOW
19	5/16" Flat Washer	4	50212	304 SS

3HP VERTICAL FOUNTAIN PUMP EXPLODED VIEW



CARRY MANUFACTURING, INC.
SINGLE AND THREE PHASE FOUNTAIN PUMP OWNERS MANUAL

BILL OF MATERIALS: 3HP VERTICAL FOUNTAIN PUMP

Refer to Illustration 13:

<u>Item #:</u>	<u>Description:</u>	<u>Qty:</u>	<u>Part #:</u>	<u>Construction Materials:</u>
1	Fountain Pump Screen	1	80510	Sch 40 PVC
2	Fountain Pump Screen Top - Vertical	1	80520	HPDE
3	Fountain Pump Screen Bottom - Vertical	1	80530	HPDE
4	3/4" NPT Cord Connector	1	FGB26-18B	Plastic
5	Screen Screw, #6, 1" long	34	70211	304 SS
6	Flow Sleeve	1	Flow Sleeve	Sch 40 PVC
7	14" Cable Tie	1	Tie-14-15"	Plastic
8	Fountain Pump Screen Spacer	3	80560	HDPE
9	Cup Washer #6	6	70217	304 SS
10	Pump Head Assembly w/ 3" Discharge	1	55SS1501-Assembly	304 SS
11	3 HP Motor	1	See Invoice for Motor Information.	
12	30' Motor Lead	1	40502	SJEOW
13	5/16"-24 Hex Head Nut	4	40204	304 SS
14	5/16" Lock Washer	7	50202	304 SS
15	7/16"-18 x 2-1/2" Hex Head Bolt	4	50230	304 SS
16	7/16"-18 Hex Head Nut	8	50231	304 SS
17	7/16" Flat Washer	4	50232	304 SS
18	7/16" Lock Washer	12	50233	304 SS
19	5/16"-18 Hex Head Nut	3	50204	304 SS
20	Pump Base Pad	3	50122	Buna Rubber
21	5/16"-18 x 2-1/2" Head Head Bolt	3	50216	304 SS
22	5/16" Flat Washer	3	50212	304 SS

CARRY MANUFACTURING, INC.
SINGLE AND THREE PHASE FOUNTAIN PUMP OWNERS MANUAL
3/4HP HORIZONTAL FOUNTAIN PUMP EXPLODED VIEW

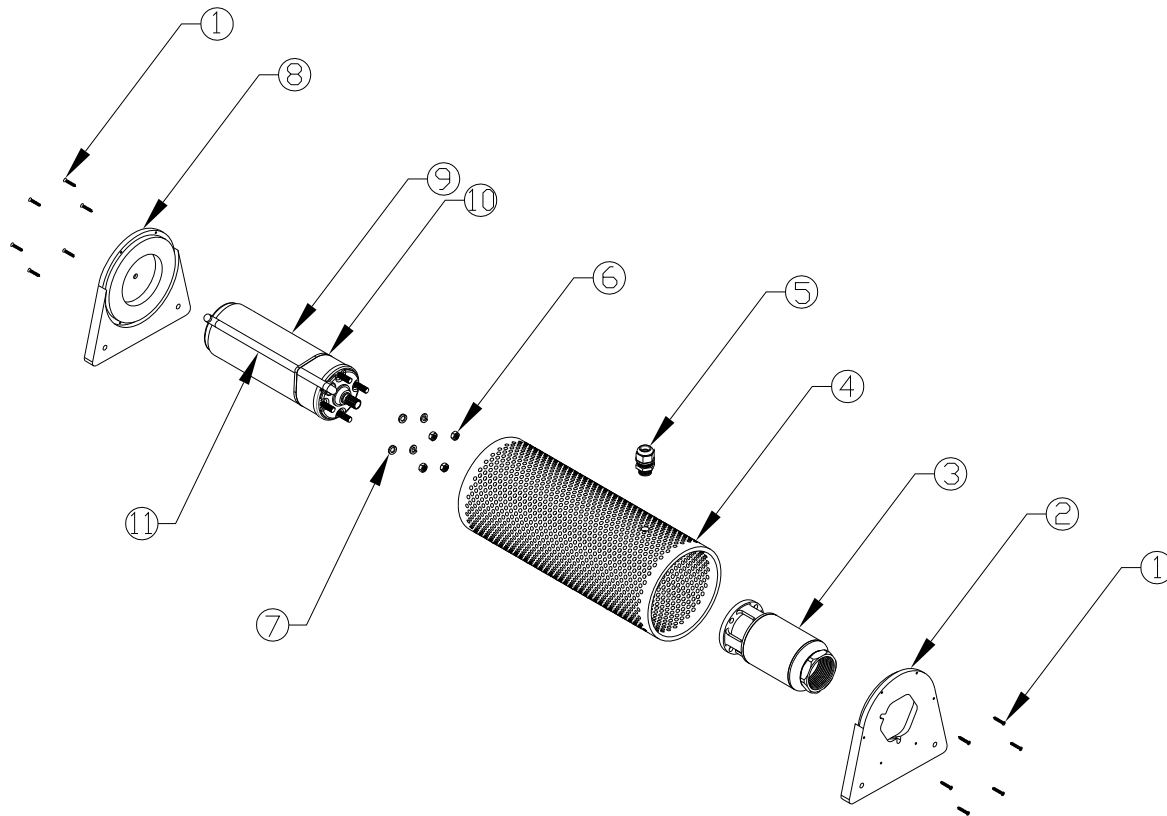


Illustration 14



CARRY MANUFACTURING, INC.
SINGLE AND THREE PHASE FOUNTAIN PUMP OWNERS MANUAL

BILL OF MATERIALS: 3/4HP HORIZONTAL FOUNTAIN PUMP

Refer to Illustration 14:

<u>Item #:</u>	<u>Description:</u>	<u>Qty:</u>	<u>Part #:</u>	<u>Construction Materials:</u>
1	Screen Screw, #6, 1" Long	12	70211	304 SS
2	Fountain Pump Screen Top - Horizontal	1	80470	HDPE
3	Pump Head Assembly with 2" Discharge	1	SPP9001-Assembly	304 SS
4	Fountain Pump Screen	1	80460	Sch 40 PVC
5	1/2" NPT Cord Connector - 2-Wire Motors	1	FGB21L-10B	Plastic
	3/4" NPT Cord Connector - 3-Wire Motors	1	FGB26-18B	Plastic
6	5/16"-24 Hex Head Nut	4	40204	304 SS
7	5/16" Lock Washer	4	50202	304 SS
8	Fountain Pump Screen Bottom - Horizontal	1	80480	HDPE
9	3/4HP Motor	1	See Invoice for Motor Information.	
10	14" Cable Tie	1	Tie-14-15"	Plastic
11	30' Motor Lead - 2-Wire Motors	1	40501	SJEOW
	30' Motor Lead - 3-Wire Motors	1	40502	SJEOW

CARRY MANUFACTURING, INC.
SINGLE AND THREE PHASE FOUNTAIN PUMP OWNERS MANUAL

1-1/2HP HORIZONTAL FOUNTAIN PUMP - EXPLODED VIEW

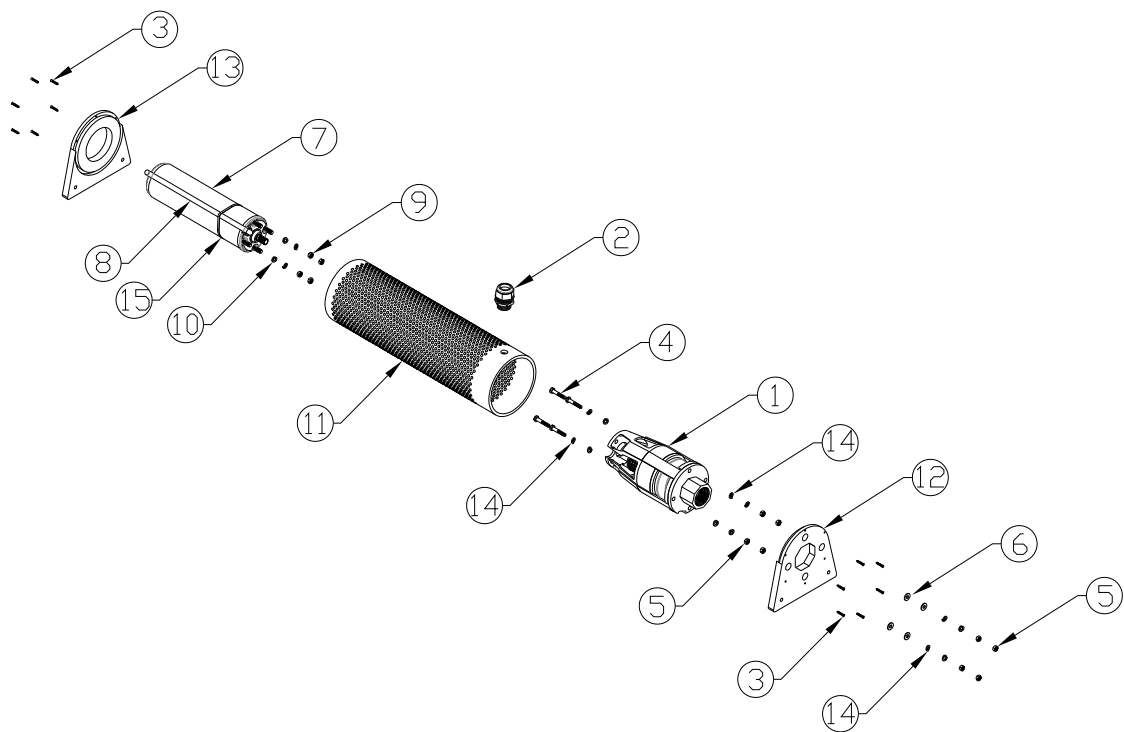


Illustration 15



CARRY MANUFACTURING, INC.
SINGLE AND THREE PHASE FOUNTAIN PUMP OWNERS MANUAL
BILL OF MATERIALS: 1-/12HP HORIZONTAL FOUNTAIN PUMP

Refer to Illustration 15:

<u>Item #:</u>	<u>Description:</u>	<u>Qty:</u>	<u>Part #:</u>	<u>Construction Materials:</u>
1	Pump Head Assembly w/ 2" or 3" Discharge	1	55SS851- Assembly	304 SS
2	1/2" NPT Cord Connector - 2-Wire Motors	1	FGB21L-10B	Plastic
	3/4" NPT Cord Connector - 3-Wire Motors	1	FGB26-18B	Plastic
3	Screen Screw, #6, 1" long	12	70211	304 SS
4	7/16"-14 x 2-1/2" Hex Head Bolt	4	50230	304 SS
5	7/16"-14 Hex Head Nut	8	50231	304 SS
6	7/16" Flat Washer	4	50232	304SS
7	1-1/2 HP Motor	1	See Invoice for Motor Information.	
8	30' Motor Lead - 2-Wire Motors	1	40501	SJEOW
	30' Motor Lead - 3-Wire Motors	1	40502	SJEOW
9	5/16"-24 Hex Head Nut	4	40204	304 SS
10	5/16" Lock Washer	4	50202	304 SS
11	Fountain Pump Screen	1	80410	Sch 40 PVC
12	Fountain Pump Screen Top - Horizontal	1	80420/80425	HDPE
13	Fountain Pump Screen Bottom - Horizontal	1	80430	HDPE
14	7/16" Lock Washer	12	50233	304 SS
15	14" Cable Tie	1	Tie-14-15"	Plastic

CARRY MANUFACTURING, INC.
SINGLE AND THREE PHASE FOUNTAIN PUMP OWNERS MANUAL
3HP HORIZONTAL FOUNTAIN PUMP - EXPLODED VIEW

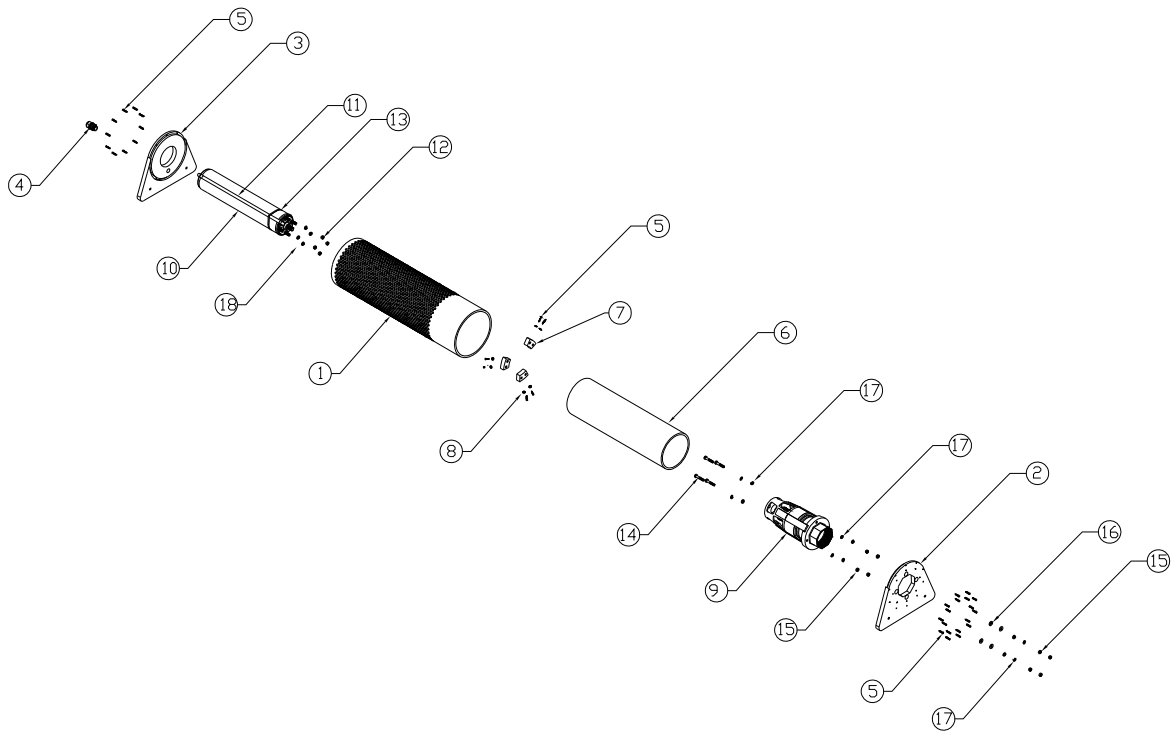


Illustration 16



CARRY MANUFACTURING, INC.
SINGLE AND THREE PHASE FOUNTAIN PUMP OWNERS MANUAL

BILL OF MATERIALS: 3HP HORIZONTAL FOUNTAIN PUMP

Refer to Illustration 16:

<u>Item #:</u>	<u>Description:</u>	<u>Qty:</u>	<u>Part #:</u>	<u>Construction Materials:</u>
1	Fountain Pump Screen	1	80510	Sch 40 PVC
2	Fountain Pump Screen Top - Horizontal	1	80520	HDPE
3	Fountain Pump Screen Bottom - Horizontal	1	80530	HDPE
4	3/4" NPT Cord Connector - 3-Wire Motors	1	FGB26-18B	Plastic
5	Screen Screw, #6, 1" long	34	70211	304 SS
6	Flow Sleeve	1	Flow Sleeve	Sch 40 PVC
7	Fountain Pump Screen Spacer	3	80560	HPDE
8	Cup Washer #6	6	70217	304 SS
9	Pump Head Assembly w/ 3" Discharge	1	55SS1501-Assembly	304 SS
10	3 HP Motor	1	See Invoice for Motor Information.	
11	30' Motor Lead	1	40502	SJEOW
12	5/16"-24 Hex Head Nut	4	40204	304 SS
13	14" Cable Tie	1	Tie-14-15"	Plastic
14	7/16"-14 x 2-1/2" Hex Head Bolt	4	50230	304 SS
15	7/16"-14 Hex Head Nut	8	50231	304 SS
16	7/16" Flat Washer	4	50232	304 SS
17	7/16" Lock Washer	12	50233	304 SS
18	5/16" Lock Washer	4	50202	304 SS

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VERTICAL FOUNTAIN PUMP DIMENSIONS:

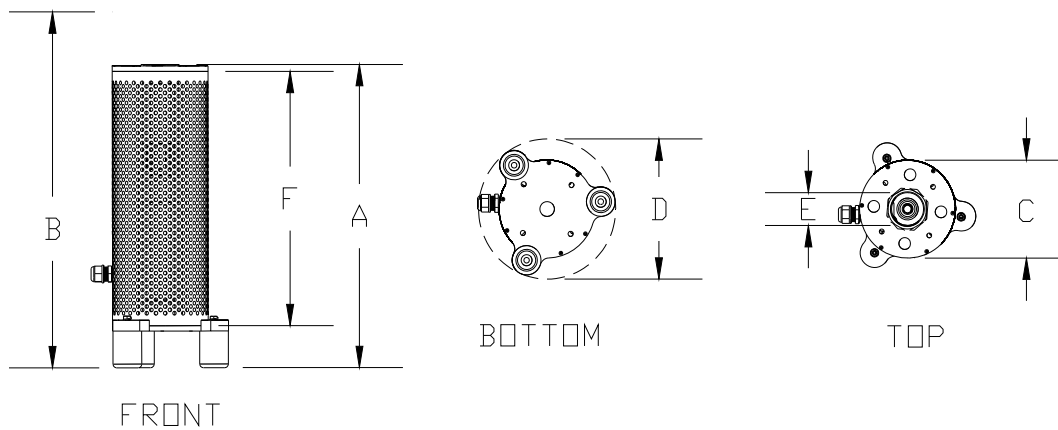


Illustration 17 - 3/4 HP Vertical Pump

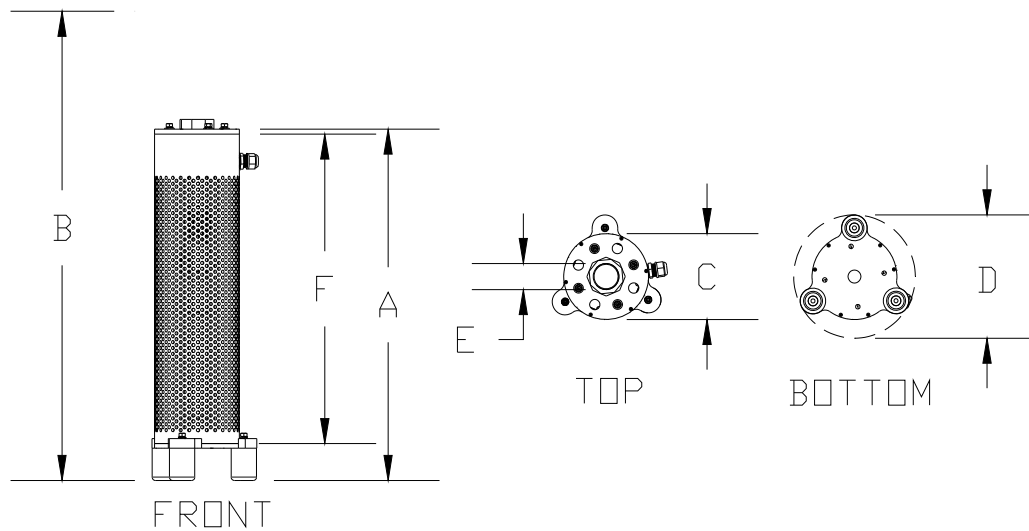


Illustration 18 - 1-1/2 HP Vertical Pump

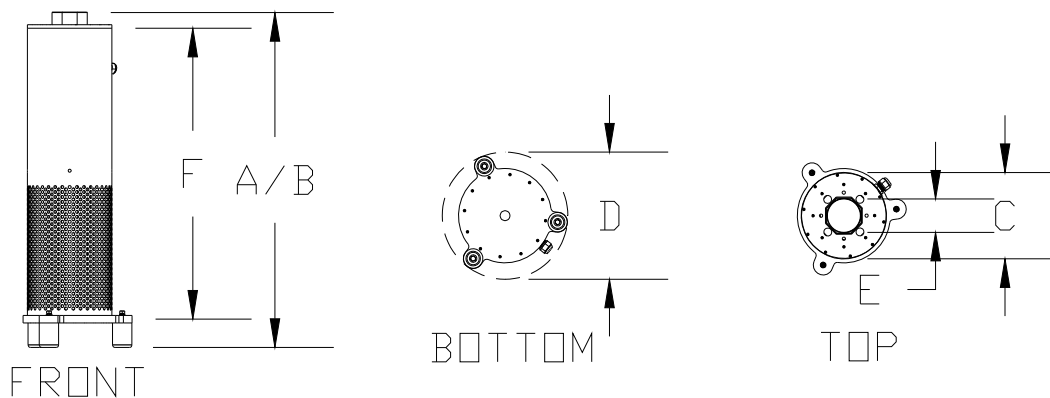


Illustration 19 - 3 HP Vertical Pump

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VERTICAL FOUNTAIN PUMP DIMENSIONS

Table 6: Vertical Fountain Pump Dimensions (all dimensions in inches)

Model #	Weight	Height - A	Min. Sub - B	Dia. Of Pump Casing - C	Dia of Base - D	Discharge - E	Screen Height - F
F20075-123V w/ 2-Wire Mtr	30	20.50	24.00	6.625	10.00	2" Female NPT	17.25
F20075-123V w/ 3-Wire Mtr	30	20.50	24.00	6.625	10.00	2" Female NPT	17.25
F20075-320V	30	20.50	24.00	6.625	10.00	2" Female NPT	17.25
F20075-323V	30	20.50	24.00	6.625	10.00	2" Female NPT	17.25
F20150-123V w/ 2-Wire Mtr	53	29.50	36.00	6.625	10.00	2" Female NPT	25.25
F20150-123V w/ 3-Wire Mtr	55	28.00	36.00	6.625	10.00	2" Female NPT	23.75
F30150-123V w/ 2-Wire Mtr	53	29.50	36.00	6.625	10.00	3" Female NPT	25.25
F30150-123V w/ 3-Wire Mtr	55	28.00	36.00	6.625	10.00	3" Female NPT	23.75
F20150-320V	50	28.00	36.00	6.625	10.00	2" Female NPT	24.00
F30150-320V	50	28.00	36.00	6.625	10.00	3" Female NPT	24.00
F20150-323V	50	28.00	36.00	6.625	10.00	2" Female NPT	24.00
F30150-323V	50	28.00	36.00	6.625	10.00	3" Female NPT	24.00
F30300-123V	85	34.00	34.00	8.625	13.00	3" Female NPT	29.00
F30300-320V	75	31.00	31.00	8.625	13.00	3" Female NPT	26.50
F30300-323V	75	31.00	31.00	8.625	13.00	3" Female NPT	26.50

Note: The use of a Sumoto Motor in place of a Franklin Electric Motor may alter the dimensions from those above. Contact the factory for specifics.

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HORIZONTAL FOUNTAIN PUMP DIMENSIONS:

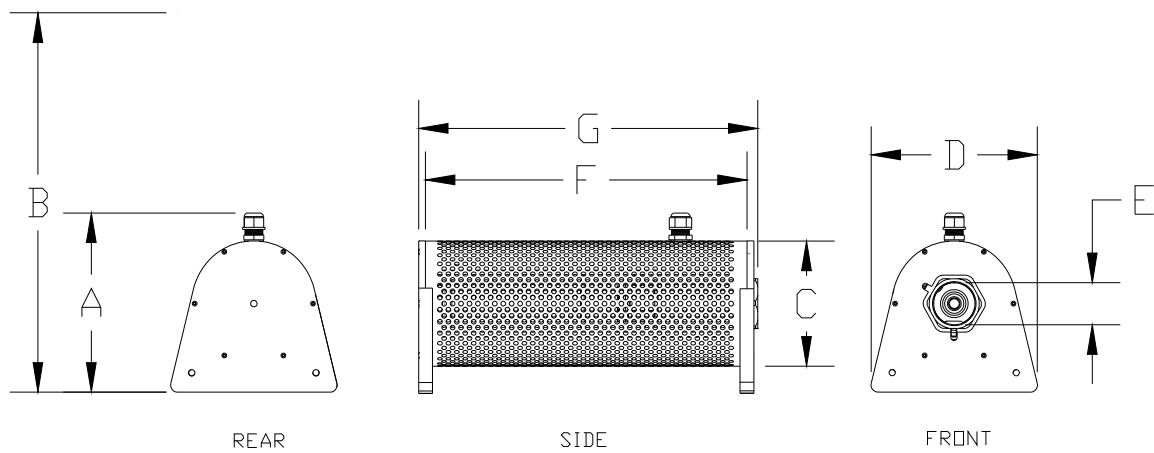


Illustration 20 - 3/4 HP Horizontal Pump

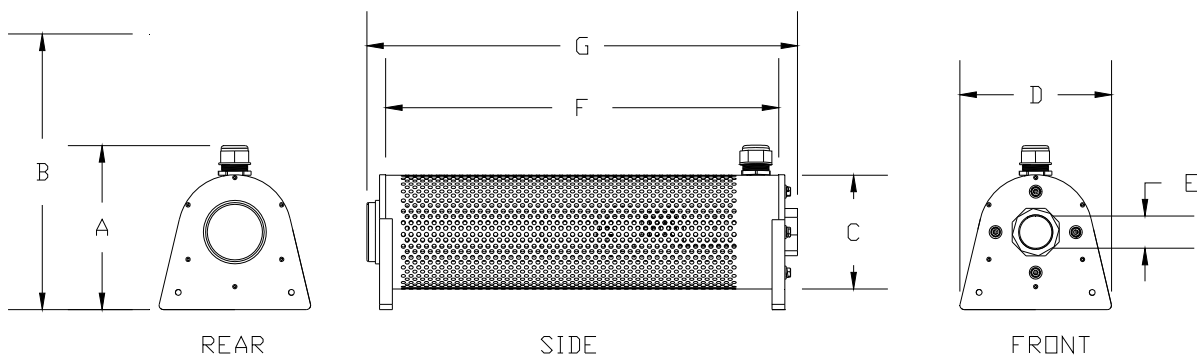


Illustration 21 - 1-1/2 HP Horizontal Pump

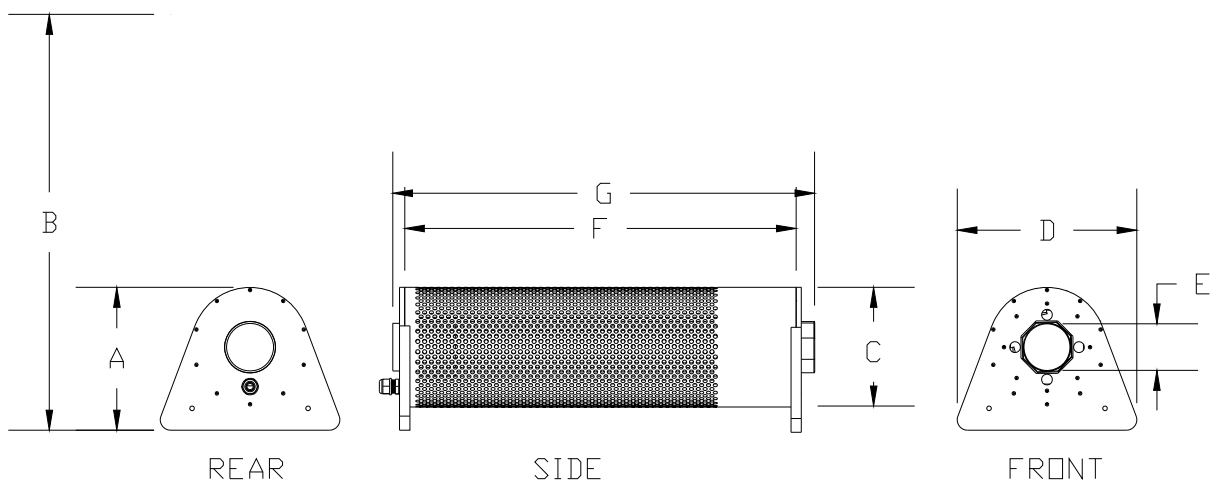


Illustration 22 - 3 HP Horizontal Pump

CARRY MANUFACTURING, INC.
SINGLE AND THREE PHASE FOUNTAIN PUMP OWNERS MANUAL
HORIZONTAL FOUNTAIN PUMP DIMENSIONS

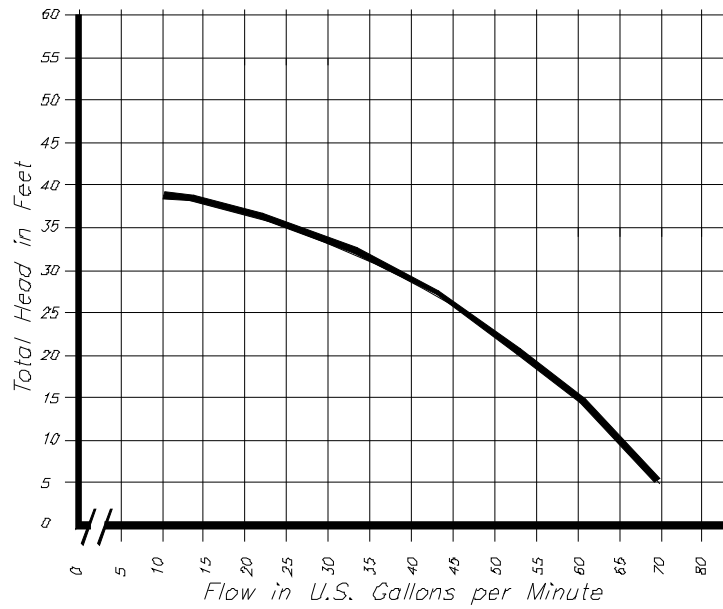
Table 7: Horizontal Fountain Pump Dimensions (all dimensions in inches)

Model #	Weight	Height - A	Min. Sub - B	Dia. Of Pump Casing - C	Dia of Base - D	Discharge - E	Screen Length - F	Pump Length - G
F20075-123H w/ 2-wire Mtr	25	9.50	20.00	6.625	9.00	2" Female NPT	18.00	18.50
F20075-123H w/ 3-wire Mtr	25	9.50	20.00	6.625	9.00	2" Female NPT	18.00	18.50
F20075-320H	25	9.50	20.00	6.625	9.00	2" Female NPT	18.00	18.50
F20075-323H	25	9.50	20.00	6.625	9.00	2" Female NPT	18.00	18.50
F20150-123H w/ 2-Wire Mtr	48	9.50	24.00	6.625	9.00	2" Female NPT	23.75	27.00
F20150-123H w/ 3-Wire Mtr	50	9.50	24.00	6.625	9.00	2" Female NPT	23.50	25.50
F30150-123H w/ 2-Wire Mtr	48	9.50	24.00	6.625	9.00	3" Female NPT	23.75	27.00
F30150-123H w/ 3-Wire Mtr	50	9.50	24.00	6.625	9.00	3" Female NPT	23.50	25.50
F20150-320H	45	9.50	24.00	6.625	9.00	2" Female NPT	21.50	24.00
F30150-320H	45	9.50	24.00	6.625	9.00	3" Female NPT	21.50	24.00
F20150-323H	45	9.50	24.00	6.625	9.00	2" Female NPT	21.50	24.00
F30150-323H	45	9.50	24.00	6.625	9.00	3" Female NPT	21.50	24.00
F30300-123H	78	10.50	30.00	8.625	13.25	3" Female NPT	28.50	32.00
F30300-320H	68	10.50	30.00	8.625	13.25	3" Female NPT	25.50	29.00
F30300-323H	68	10.50	30.00	8.625	13.25	3" Female NPT	25.50	29.00

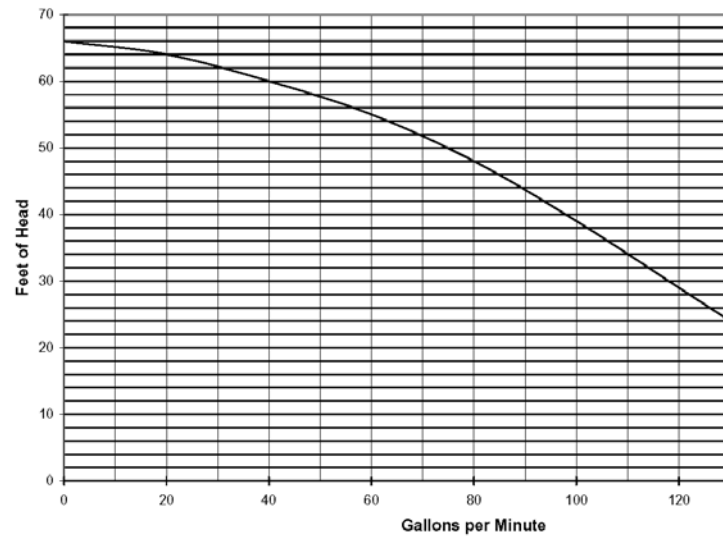
Note: The use of a Sumoto Motor in place of a Franklin Electric Motor may alter the dimensions from those above. Contact the factory for specifics.

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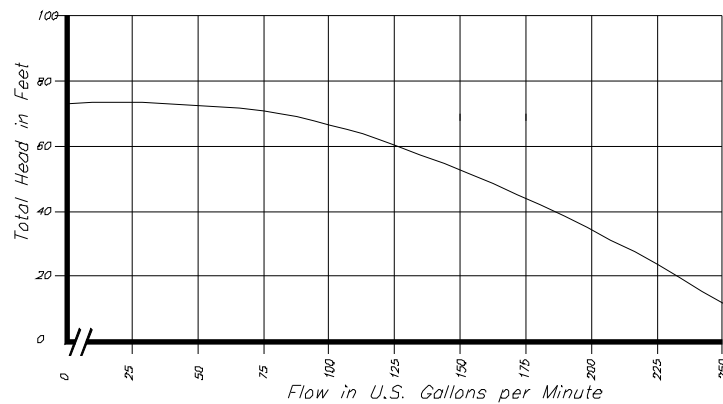
SINGLE AND THREE PHASE FOUNTAIN PUMP OWNERS MANUAL



3/4HP Performance Curve



1-1/2HP Performance Curve



3HP Performance Curve



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PRODUCT USE & SAFETY INFORMATION

- Do not use a Carry Fountain Pump in a swimming area.
- Please note: horizontal pump motors typically have a shorter life expectancy than its vertical counterpart. Franklin Submersible Motors are designed primarily for operation in the vertical, shaft up position. During acceleration, the pump thrust increases as its output head increases. In cases where the pump head stays below its normal operation range during start-up and full speed conditions, the pump may create upward thrust. This creates upward thrust on the motor's upthrust bearing. This is an acceptable operation for short periods at each start, but running continuously with upthrust will cause excessive wear on the upthrust bearing.
- As the mounting position of the motor becomes further from vertical and closer to horizontal, the probability of shortened thrust bearing life increases. For normal motor life expectancy in horizontal pumps, we have designed the pump with a slight rise using the feet of the pump to raise the discharge (shaft end) of the pump. Applications should limit the number of starts to 10 within a 24-hour period. In horizontal applications where this is not possible, Carry suggests the use of a Sumoto Motor in place of the Franklin Electric Submersible Motor. See the Replacements Section of the Full Product Catalog for more information on Sumoto Motors.
- The electrical control panel must be installed observing all applicable national, state and local codes as per the latest revision of the National Electric Code.
- A service entrance rated disconnect may need to be fused depending on the distance it is from the control panel and the presence of the primary power circuit breaker in the control panel. Consult the National Electric Code.
- A good earth ground must be provided at the electrical service entrance by means of a metal grounding stake. The true ground must also be connected to the ground terminal in the electrical control panel.
- The pump must be properly grounded to protect personnel from a serious or fatal electrical shock hazard and the pump motor from lightning induced voltage surges. The ground wire in the motor lead must be connected to the ground terminal in the electrical control panel.
- Both Single and Three Phase Carry Fountain Pumps must be connected to the correct Carry, or equivalent, pump motor controls to validate the warranty. Per Franklin Electric specifications, the control panel must be protected by a magnetic starter with extra quick trip overload relays in all legs to validate the warranty.
- Running a Carry Fountain Pump dry (i.e., without water going by the motor as a coolant) will ruin the motor. Running the pump dry will create a "no-load" situation that **will not** increase the amperage-draw and **will not** activate any protective devices in the electrical control panel (unless your electrical control panel is specifically designed to protect the pump with a low-amperage-draw monitor).
- Show caution when operating a pump on manual control. It is important not to let the pump run dry. (See warning above.)
- Do not let water freeze in and around the pump. Severe damage will result to the pump and motor if water freezes around them.
- Remove the construction debris, muck and sludge from the sump bottom before the initial start up. These obstructions can starve the pump of water and ruin the motor.
- Your Carry Fountain Pump is equipped with a strainer screen. It will provide an effective barrier from debris in storm water and water transfer applications.
- Carry 3/4 HP and 1-1/2 HP Fountain Pumps can accept up to 3/16" solids. Carry 3 HP Fountain Pumps can accept up to 3/8" solids. If your application has the potential for matter larger than 3/8", it is recommended that you also screen the inlet.

CARRY MANUFACTURING, INC.
SINGLE AND THREE PHASE FOUNTAIN PUMP OWNERS MANUAL
MAINTENANCE PROCEDURES

- Your Carry Fountain Pump was designed to require very little maintenance. In addition to implementing the procedures below, check the Product Use & Safety Information section of the manual for more information pertaining to maintenance procedures that should be followed for any specialty components.
- Protect or remove the pump and/or floats during periods when water might freeze directly around it. Do not let water freeze around the pump. Severe damage will result to the pump if water freezes around it.
- Debris management is critical to the effective operation of your pump. It is preferable that the design of the site keep debris, muck and sludge from entering the sump. If this is not the case, inspect and clean the inside base of the sump and the pump's strainer screen at a safe time after a major storm event or series of storm events to minimize the debris and muck-pack build-up. The Carry Strainer Screen will collapse from the suction of the pump if more than 95% of the screen's surface area becomes clogged. Debris or muck-pack build-up may starve a pump of water and ruin the motor.
- Check that the ground wire is making a clean connection to the ground lug in the control panel and that the ground rod is properly installed.
- Check that the pump is ready to work by test running it at intervals of no less than once a year.
- Check that the water level in the sump is above minimum submergence level at all times.

Extreme caution should be used to ensure that the pump does not run dry. Running a Carry Fountain Pump dry can cause significant damage to the motor and pump. When a Carry Pump runs dry, it boils the coolant/lubricant water out of the motor. This causes extreme wear on the motor bearings, causing irreparable damage and will void the pump warranty. This can also cause damage to the seals and bushings in the pump. Franklin Pump Tech Plus devices can be used in conjunction with single phase pumps that can be set up to detect "dry pump" operations and help prevent damage. Motor Savers can be installed in Single Phase or Three Phase systems to detect "dry pump" operations.

**For Sales & Service - Call your Local Distributor
or Carry Manufacturing, Inc. at 800-492-2779.**

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SINGLE AND THREE PHASE FOUNTAIN PUMP OWNERS MANUAL

FRANKLIN ELECTRIC AND SUMOTO MOTORS

Table 8: Franklin Electric and Sumoto Motors

Motor Description	Franklin Part #:	Sumoto Part #: (includes 30' motor lead)
3/4 HP, Single Phase, 230V, 2-Wire	24450790	S-61650080
3/4 HP, Single Phase, 230V, 3-Wire	21450706	N/A
3/4 HP, Three Phase, 200V	23450292	N/A - use 230V motor
3/4 HP, Three Phase, 230V	23451206	S-61620080
1-1/2 HP, Single Phase, 230V, 2-Wire	24430990	S-61650160
1-1/2 HP, Single Phase, 230V, 3-Wire	24430006	N/A
1-1/2 HP, Three Phase, 200V	23450492	N/A - use 230V motor
1-1/2 HP, Three Phase, 230V	23451406	S-61620160
3 HP, Single Phase, 230V	22430206	N/A
3 HP, Three Phase, 200V	23430626	N/A - use 230V motor
3 HP, Three Phase, 230V	23431606	S-61620250

REPLACEMENT MOTOR LEADS

Carry Fountain Pumps are manufactured with a standard 30' power lead. The lead is used to connect the pump motor to the control panel. Longer lengths of power leads can be ordered to fit your application. Use Table 11 on page 11 of the Franklin Electric Submersible Motors Application, Installation and Maintenance manual to determine the maximum lengths of cable applicable to your pump application. In some instances, it may be necessary to splice the power lead to suit the application.

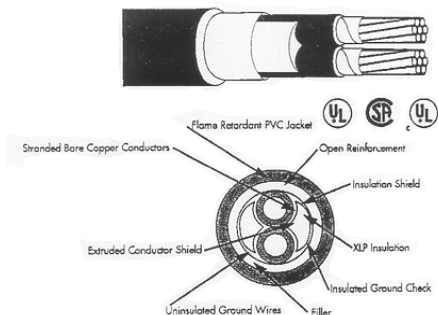


Illustration 23

Carry Fountain Pump leads are generally either 2-Wire with a ground or 3-Wire with a ground. 2-Wire with ground leads have one each of a Black, White and Green wire. 2-wire pumps do not require a control panel. 3-Wire with ground leads have one each of Black, White (or Yellow), Red and Green wire. When connecting to the control panel use the wiring diagram to determine the connections for each color wire. Some of the control panel diagrams (specifically Franklin Single Phase Control Panels) indicate the use of a yellow lead. Carry 3-Wire with ground leads use the White wire for connections to the Yellow lead.

Caution: Pumps should not be lifted by the power lead. This can cause a short in the lines and premature failure of the pump.

Note: All motors returned to Carry Manufacturing, Inc. for warranty consideration must have the motor lead returned with the motor.

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SINGLE AND THREE PHASE FOUNTAIN PUMP OWNERS MANUAL

BE WISE! When installing this equipment use extreme caution. Follow the installation instructions included in this and the Franklin Electric Submersible Motors Application, Installation and Maintenance Manual. Call CARRY for assistance if needed at 800-49-CARRY (2-2779).

